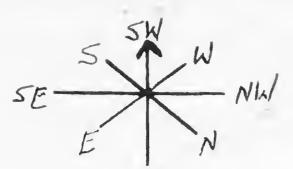
dir. hgt. loc. remarks species time extrance of Pearl Harbon 1015 Ruddy Turnstone 201 gravel bars at entrance 1033 Pomarine Jager phase 1053 Plase 1034 1034 dark phase 1041 11 Noddy Tern 1053 SE low Wedge-tailed Streamunter 1104 low N SW 1111 Pomarine JAeger 1 light phase 1122 Wedge-tailed SHEARWATER 5W low Pamarine JAeger 1137 low light phase Wedge-tailed Streamwater 1141 SE low Tom 1145 NW Noddy Bp. 1000 Streammater NW low IMMAtare 1000 1150 E Brown Booky Pomarive Jaeger 1155 ox water light phase 1155 100 Terns E 1201 Pomarine Jaeger .0 Ca 50 light phase 1208 (not sara about) 905-25 1209 Shearwater low light below Petre 1 1211 weelge toil shearnater 1.E 1211 2 11 11 1127 1253 N 1303 Pomarine Jaeger 751 1375 - adult-with block up, light Wedge tailed 1335 undergrant E Shearwater low 1337 E 10 W Slusted from water - all in one flock all light phose Pomarine Jacger 1344 Wedge-tailed E 10w Shearwater 1354 Cooks/Bonia 10 w Is. Petrel Dark-Rumped Petrel low 7.847 1412 NE

		6007	1		 -	16.
		N		E		
		\wedge	IF.			
	time	species	#	dir.	hgt.	remarks loc.
	1430					the 4 faegers still following and feeding in the
	1					gorboge dreped by the ship
	143/	Vedge-tail	1	N	low	go coogs arepar of the
		5hearwater				
	1445	1,	1	SE	low	
	1449	11	1		//	
	1521	(1)	/	NE	//	
1	1531	large Ptero drima	1	N	(/	
	1513	"1	1	NE		
	1529	wedge-til				
		Sheawat	/	NE	11	
	3/	-/ /				
	1536	1=lock				vot actively seeding, but milling
		Souty term	1			around. (I dark phone wells - tail)
		wedge toil				
		shearwater	200	+25		
	1545	Flock				- not actively feeding, but milling,
		Common Nodd,				arounds
		Tern	5+			alour
		Wedge-tail	z S±	5		
		Shearwater				
	1604	wedge-tail		5E		
		Shearwater	/	5 6		
	1610	11 (1	1	5E -		- don't Phon
	1610	11 11	,	5		
	1		6	7		
	1611	Small Pherodrama				
	1620	Wedge-Tailed		\wedge		
		Shearwater	/	/ V		$(1 + \pm 1)$
F	1645	Wedge triled				Flock I bird, seen to feed but rest of
		. 4 ./	80+	N		
		SMALL Pterodroma	1	\sim		I dark phase Wedge-tail birds appeared to be migrating
-	11700	TINK				
+	1703	Wedge-tailed		(0)		probably feeding; large fish (skipjack) observed;
		Sheamonter	75+			At least I dark phase Wedge-TAIL
		Sooty Terr	5			
9-	10.00	Pomarine Jaeger	J.			
	1720	wedg-tayled		N	low	alighting in water datilling around; avising after
		Thear wasor	1		,	extended feeding states
	1,222	1/00,000,00				
	1732	WEDGETALLED SHEARWATER	,			
	4			\sim	Low	
	1746	Wedge-tailed		4.		
		Spearwater	/	\wedge	low	
	1750	PIERODROMA	1	NW	10	
	1757	Wedge-tailed Shearwater	,	-	10W	
	1800			E	low	apparent sugart
	18/2	SMALL Pterodroma	1	NE.	low)	Apparent sunset
			1	7 1 2	1000	

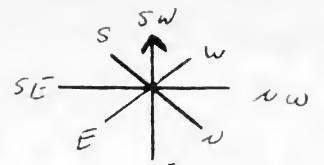
		Ē		N	(emmenced: 17637	
	time	species	#	dir.	hgt.	remarks	loc
	0651	Gook's Petrel)	E	low	Circling but not fishing	
	0 6 5 6	Leinze Ptorodroma	2	NW	1 ou	Probably at least I was Juan Formandez Petvel	
	0657			~ ~		Apparent sunvise 5 same 16645	
	0721	cook's Petrel				25000	
	0724	" "	1	NW	low		
		Juan Fernandez	2	NW	100		
		Petre/	3	NW	10w		
F	0730		7	5	low	feeding	
F		Cook-Bomp Pet.	24		n >		
F		Wedkeet		, ,		4 P	
		2 negrwator			• •		
<i>F</i>		Pterodroma			٠,	, small, cook's Petal size, but head + neck	
F		Frigate Bird	1			appeared all white. Underwing is similar	
=		Juan Fernandez				" to cooks but white one is gray with	
1/2			3	, .	. •	" little contrast letteren dock grayarea.	
F			1	N	1000		
F	0749	Sooty Torn	90	E	medium	Fooding	
		Juan Fornanda	7	E	104		
		Park-bumped Pot.	'	1-	,,,,	1	
		wedge tailed shewwoodor	2	E	100	11	
	0823	Greata Frigate	1.	E	med-hig		
		luckge tail		E	lau		
		Shearwald	1	-			
	0831	Large Pterodroma	1	NW	low		
	0850	Large Pteradrom		5	low		
	0853	Cook's Petrel	2	5	low		
CA 0900	09/6	Pterodroma	1	NW	low	- SHIP STOPPED	
	0925	Red-footed Booky	1	O1	to 751	immature	
	0935	Small Pterodrom	1	.5	,		
	0936	White-tailed			10W		
		Tropicbind	1	.5'	300 ca		
	0940	Shearwater/petre	1	NW	low		
	0074-1	Cook's Petrel	/	N#	low		
	0950	Wedge-triled Streamwater	1	5	low		
	0952		,	5	to 501		
	1008	(1)	2	NW			
	1015	11 14	1	SW	To 50		
	1025	21 17	,	57	to 301		
(1036	Tropicarid or			1		
	1000	Fairy Terr)	5 W	To 50'		
	1036	WEDGETAILED SHEARWATER		5	Low		
	1042	11 11 11	1	A -M	11		
			1	SE	,		

		<i>N</i>	IE	N			
	time	species	#	dir.	hgt.	remarks	loc.
	1105 -	Wedge tsil		~		- UNDERWAY.	
		Wedge-tail shearwater	1	,U	10ω		
	1143	Sooty or Grayback Tern	2	NE	/οω		
	115 8	Pterodrom a	1	NNW	100/150		
	1201	Flock.				- vod relivel	
		sooty tern	29	+		- vod actively feeding looks on if flock is breaking The true to	
		wedge-tail shearwater				is breaking of The two ternsot/148 were butobly leaving this - (lock - Same of the terms	
		Shearwater	5	-		were calling.	
	1212	Cooks Petre!	,				
		Wedge - wil Showater	/	2 SE			
		Wedge-fail Sheamaton		3			
	1240	cook's Petrel	/	25			
	1247	cooks /etre/	1	SE	1000		
	1252	Sort T	1	NW	1000		
		Sooty Tern Park-rumped ?	2	5E	to 30'		
		Petrel	1	NW	to 50'		
	1345	Petrel	1	SE	low	Bulwer's Petrel on # Storm Petrel	
FF	1401	Feeding Flock					
		Great Frightebird	2	CA		At least 1.5 miles AWAY	
		Sooty Term	50+				
	1418	Great I					
	14-19	Cook's Petral	1	W	low		
FF	1430	Feeding Flock	-				
		JUAN FERNANDEZ		0	low		
		reinel	2				
		Cook's Petrel Kernadae Petrel				observed catching a flying fish out of the Air	
		Great Frigate					
		Wedge-tailed Stearwater					
		Sasty Term	5				
FF	1435	Feeding Flock					
		Sooty Tern	8	Ca	low		
		Wedge-tailed Streamwater					
		Golfs Petrol					
		small Pterodroma					
		Varge PteradroMA White-tailed	9			about	
		Tropicbird	/			dove into water from 100 feet	
		4.0					

dir. hgt. remarks loc. species time 1440 JUAN FERNANCE \mathcal{N} low 1443 Wedge-triled Streamwater NW low 11 ENE 1450 Pterodroma SE 11 1454 sooty tern 5 W 0 1454 500ky(?) Tern 1455 Pterodrom a SE 1457 Shearwaler/Petrel archiguy & flying like sout, showwaters 70 50' 1520 but too Far out to tell Pterodroma SE 100 1523 1530 Frigate bird To 50' Immalura 1600 Flock - feeders but very scattered es-if Sooty Ter~ 30 ±5 getting ready to despera. Wadge - Lail Sheamoth 3 Jaarternandez Pehrel Pterodromo Cooks Polit 1 together for good contrast Covin Estand Petral Sheavuaka/Petrel 5 ±1 1608 Small Pterodroma Cook'S PETREL SE Low JUAN FERNANDEZ 1629 PETREL SE Low GREAT 1631 FRIGATE BIRDS 0 150 1729 Japanese to land on TV antenna on 851 White-Eye Cook's Bonia 1747 SE Island Petrel 10 w 1750 SE 1000 Shearwater 1759 SE low Cooks/Bonin Is 1800 SE 1000 Petrol Wedge-tailed 35-10 W Shearwater 1815 Apparent Smoot



	E		N		
time	species	E#	dir.	hgt.	remarks loc.
0654	SMAL Plerodroma	1	E	Low	
0656		-	manufacture 9 count		- SUNRISE
0658	Cook's /BONIN				
	Cook's /BONIN PETREL	,	S	,	
		′	3	Low	
0721	Wedge-tailed Shearwater	,	5'	1	
		′	3	low	
0725	Cooks/Bonin Petrel	,	N	low	
		/			
	и	1	\sim	low	
0726	in u	,	N	low	
		1			
0737	24 26	/	NW	low	
074-1		25		/ -	
	Tuan Fernand Petrical	1	NW	low	
0753	lamon Det	,		,	
0132	large Tlerodron	4 1	S	low	
0755	Cook's BONIN Petrel		1/1/1	,	
201	tetrel	1	NW	low	
0/57	n u	1	5E	low	
0759	11 41	,	45	1-1-0	
		/	har	1000	
0801	11 W W	,	547	1	
·		1		IBW	
0804	Wedge-Tailed		4.15	,	
	SHEArwater	1	SE	10w	
0809	Cooks BONIN	,	14/	/	
	Wedge-tailed SHEARWATER Cooks/Bonin Petrel	(10W	
-011	4			1	
		(سے د	1000	
0815	COOKS/BONIN		1/1/	1000	
	retref	1	IVN	1000	
0827	feterodroma	1	NW	low	
0828	Cooks/Bonin Petrel Telerodroma Sooty Streamuntar	9	5	to 50	
0905	Pterodroma	1	S		
0910	Sooty. Shearwater	VI	0		
0910	Shearwater/	104			
	Potral	/			
092,	500ty Shearwater	/	500)		
0925	Sooty Shearwater	60	£5 5		



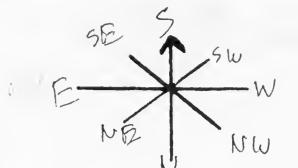
time	species	15.4	dir.	hgt.	remarks	loc.
	wedge-twil Shearmuter		E	low		
0955	Pterodruma	,	N	••		
0955	//	2	sω	11	- slying as if heading for a feeding flock	
1005	11	3	N	11 -	- slying as if heading for a seeding sl	
	Petral	1	NW	,,	11 11 11 11 11 11 11	
1007	Vann of				et 1. 1. 1. 1. 1. 1. 1.	
	Sooky(?) Shearwaker	45	+ S	11		
1027	Cooky/Bonn in Pelvel	1		u .		
1038	Juan Fernande Petrel	/	NW	и		
1040	Cooks/Bonin Petrel	1	5E	4		
1042	large Pterodom	1	NW	U		
1100	Cook's Petrel	6	E	"		
	Herald Petrol	È	E	10	- near size of Juan Ternander Catel, how	ever amallar
	Great Frigatebis		E	11	Lark brown, white below with	
	(28 + 1 imm)				white totament above, backer area about eine.	
1139	Great Frigatali	11	NE	100	about eye. Physimal John & Palmel of	
1151	Cacks/BONIN Petrel	,	SW	low		
1202	Pteradroma	1	NW	low		
1210	Cooks/Bonin Is. Petrol	1	5	18w		
1228	COOK'S BONIN Petrel	1	5W	low		
1400	Flock -		-		Feeding	
	Souty Sheumate				La Ta la DO.	
	Shear - otal / fra	1			- white belly	ingo)
					after 8 minutes they began flying (arch and headed South as a groups	
			1			

	1=		N			
time	species	VE	dir.	hgt.	remarks	loc.
1425	Sooty Shearwater	60	±5 -		- av ording ships	
1438	Small Han a	>	5111	low		
1445	Souty Shoarwate	- 80	# 1000	1 ow to	appear to be feading.	
1452	Shearwater Greater Frigatebird	200		501		
	Shearwater	254	5 5	low		
1452	Greater					
	Frigatebird	1	E	40'		
1457	Shearwater/ Petrel	1	NW	1000		
	Petrel					
1510	Great Frigatebird	1	NE	50'		
	Frigatebird		£5-5			
1529	Souty Shearwater	35	55 5	Low		
1555	44	.,	ک			
1555		4	NE-	1000		
	Steamater	'	100	1000		
1604	Blue-faced	<i>i</i>	65.	201	4),4	
	Booby (inm)		(0)			
16 22	Sooty	30	5	1000		
	Shearwater					
16 23	//	20	5	1000		
1659	Wedge-tailed					
	Shearwater	1	NW	low		
1710	Scoty Shoer water (?)	1	5	[BW	Lone bird; come fairly close to ship; one observer sau	
1771	Sind Ptorodroma	1	W	10 (2)	Silver unsaving fracties; two observers sou none.	
1723	Large Pterudrom	1	w	low		
1731	Cook/Bonin Patral		Sw	1000 50 - lan	Non-feeling flock; moving swiftly	
1735	Sooty Shear wal	10-	5	low		
1738	Shear water/	1	Sw	love	Wordens Lack C. G. R. R. C.	
	Petvel	w .		,	Wondering back tooth in front of ships	
1740	Sooty = learward		105W	lino		
1740	11	4	5	low		
1740	1/	2	5	10w		
1740	11	,	5	low		
1744	Cook/Bonin Petro	1	Sw	low		
1758			0	Low		
1804	1	135	15 5	Low		

	•	JE	P	1		100
 1804	weda - taled	1	dir.	hgt.	remarks	loc
	Wedge-tailed Shearwaks		NW	low		
1809	Sooty Shearmal	35			Non-fooding flock moving rapidly	
1810	Sooty Shear cole		5	law	Now I was a first of the same	
1813	wedge-tailed Thearward	1	SE	l·w		
1814					1) Car Car I	
	Sooty Shearwater		5	low-50	Non-feeding flock; strung out over considerable distance in nervow lines.	
1818	Sbooty Shut. (?)	2	5	bw	TOWN TOWNS	
1819	Sooty Shearwalds			low		
1823	11	100	±10 S	low	Non-feeding flock; strung out in navrow lines	
1826	11	17	5	low	Flock	
1829	η	45	±5 5	low	Flock	
1833	11	4	5	low		
1834	10 10 10	1	S	low		
1838	Sooty Showmaby?		5	low	Dark; heavier body + wing beat fall fort	
1835	Sooty Shearward	1 3	5	low	Apparent sunset	
100					Apparent sunset	
	-					
				-		
100						1

0644	E	16-	N			
time	species		dir.	het.	remarks	loc.
0715	Sooty (?) Shearwate	10+	5	scaling		
07/6	Sooty Shear water	1	5.			
0720		1	5	-1	Apparent survise	
0728	11 11	2	5	11		
0733	Sooty(?)Shearwatar	4	5	11		
0736	Wedge-tailof Shearnafor	(NW	# low		
0818	Cooks Patrel	1	55E			
0832	Phoan ator/letras	1	N			
0832	Sooty Shearwater	20	65 5	Sentin		
0837	Large Pterodroma	2	N	low		
0842	Cook's Petrel	2	NW	low		
0901	Cooks/Bonin	1	NW	low		
0903	, , ,	,	NW	low		
0909	Cock's Petrel	/	SE	low		
0917		3		low		
	Seck's/BONIN		, , , , ,	100		
	Petre/	1	NW	low		
	SMALL Pterodrom	1	NW	low		
0938	Cooks/Bonin	/	SE	low		
0948	Cook's Petrel	2		low		
0452						
	Petrel	2	N	low		
0955	Cock's Fetrel	1	NW	1000		
0959	Wedge-tailed Steamwater	1	\mathcal{N}	low		
1003	Cooks/Benin	2	5	low		
1010	Cooks/Benie					
1010	Petrel	1	54	low		
	4 34	/	5W	1800		
1010	41	1	SW	low		
1023	41	1	N	low		
1028	Cook's Retret	1	5	low		
1032	COOKS/BONIN PETREL		NW	Low		
		1				
1034	Cook's TETREL	1	NW	Law		

1038 September 1 AN Low 1045 Cooks Bondon 1 AN 1046 Cooks Bondon 1 AN .	time	species NA	E #	dir.	hgt.	remarks	loc
Cook's Bernel 1 Not Low 727881 1 Not Low 727881 1 Not 1 Low 1045 Cook's Bernel 1 Not 1 1		WEDGETAILED					
1045 Cack Februl 1 NW 1045 Cack Februl 1 NW 1046 Cack Februl 1 NW 1046 Cack Februl 1 NW 1046 Cack Februl 1 NW 1050 Secty Shornoter 1 5 1050 Secty Shornoter 1 N /ceu 2 adult (10 proved 25 februl 1 start for body) 5 1050 Secty Shornoter 1 N /ceu 2 adult (10 proved 25 februl 1 start for body) 5 1050 Secty Shornoter 1 S 105	1039				2000		
1045 Cooks Petrol NW 1085 Cooks Bernel NW 1086 Cooks Petrol NW 1080 Cooks Petrol NW 1080 Merceroleo NW 1080 Merceroleo SE 1080 Merceroleo SE 1080 Merceroleo NE 1080 Merceroleo NE 1080 Merceroleo NW 1080 Merce	1041		1		Low		
1006 Cooks PETEL 1 1130 Seoky Tetres 1 1130 Seoky Secretary 1 1130 Secre			7		11		
1006 Cooks PETEL 1 1130 Seoky Tetres 1 1130 Seoky Secretary 1 1130 Secre	1045	Cook's Brain	/	NUI	,		
1130 MERCETURED SE 1150 Scoty Sharmater SE 1157 Pherotrom in S 1157 Pherotrom in S 11302 Wedge Tarlod NE 1304 Sharmater WW 1304 Sharmater G 40' Janking 1304 Sharmater G 40' Janking 1304 Sharmater G 40' Janking 1304 Learlie Storm S low on Houseouth 1358 South Sharmater S low on Houseouth 1358 South Sharmater S low on Houseouth 1417 Dian Fermada N low of Sharmater S low on Houseouth 1417 Dian Fermada N low on Houseouth 1417 Dian Fermada N low on Houseouth 1418 Red footof Books 7 E low on Houseouth 1413 Red footof Books 7 E low on Houseouth 1418 South Sharmater S low on Houseouth 1418 South Sharmater SS low on Houseouth 1418 South Sharmater SS low on Houseouth 1418 South Sharmater SS low on Houseouth 1418 South Sharmater S low on Houseouth 1418 South Sharmater S low on Houseouth 1418 Houseouth 1418 Houseouth 1418 Sharmater S low on Houseouth 1418 Houseouth	70 70	PETREL	1	NW	11		
130 Socky Sharmaker 1 SE " 1150 Socky Sharmaker 1 S " 1150 Socky Sharmaker 1 S " 1150 Socky Sharmaker 1 S " 1150 Medy Tailed 1 Ne " 1301 Medy Tailed 1 Ne " 1302 Medy Tailed 1 Ne " 1304 Sharmaker 1 S " 1305 Socky Sharmaker 1 S " 1315 Greater 1 S " 1600 January 1 S " 1315 Greater 1 S " 1600 January 1 S Joe Tooley Sharmaker 1 S Joe Joe January 1 S Joe	1046	Cook's PETREL	1	\prec	14		
Herodrom in 1 5 11 1302 Wedge Tailed NE 11 1304 Shearwater NW 1. 1315 Greater E 40' Juding 1321 Ceachs Storm 1 5 low on Houseasto 1358 Souty Shearwater NW 1. 1358 Souty Shearwater N 1 5 low on Houseasto 1477 Juan Fernandon 1 N 1000 2 adults () appeared at time with speaks on michaely, 5 innuatives is 3 different stape of plunage (3 Predictionally bounds with Moset bond; I marked with Blow from some above to bond; I to between the provious two descriptions 1459 Souty Shearwater SE 1000 1459 Souty Shearwater SE 1000 1502 Ceaks-Bonin SE 1000 1503 Troppished S 150' procently White-tailed PHOTOGRAPHED 1538 Newsonther SE 1000 1544 Wedge-tailed SE 1000 1615 Hearwater NW 1000 1615 Hearwater NW 1000	1130		1	SE	/1		
1302 wedge Trifed NE 1304 Shearwater NW 1315 Greater Etal S 600 1315 Greater Erigability 1321 Learlis Storm S 600 Or Harcourts 1358 Sorty Solve 2 S 600 1433 Referred Books 7 E 600 1433 Referred Books 7 E 600 1434 Referred Books 7 E 600 1459 Solve Shearwater S 10 S 1459 Solve Shearwater S 10 S 1459 Solve Shearwater SE 10 S 1459 Solve Shearwater SE 10 S 1459 Solve Shearwater SE 10 S 1502 Cooks Bonin SE 10 S 1503 Tropichical SE 1000 1538 Necrostanter SE 1000 1544 Wester-tailed SE 1000 1544 Wester-tailed SE 1000 1615 1632 Wester-tailed SE 1000 1615 1632 Wester-tailed Second I	1	Sooty Shearwater	1	5	11		
Shearwater NW 1315 Greater E 40' Juding 1321 Leachs Storm S low on Howcourts 1350 South Storm S low on Howcourts 1350 South Storm N /OW 1321 Leachs Storm S low on Howcourts 1350 South Stormster N /OW 1322 South Stormster N /OW 1333 Red Good Booky 7 E Ow 2 about (1 supported to form with speaks on mid-booky), 5 immutures in 3 different stages of plumage (3 Frederinantly bound with Broast tomb; I workly did what blow from the Broast tomb; I workly did what blow from the provious two descriptions 1459 Sooty Shamoter 35210 5' scaling 1502 Cooks Lomin SE low 1503 Tropichiad SE low 1538 Webstander SE Low 1538 Webstander SE Low 1544 Webstander SE Low 1544 Webstander SE Low 1554 Webstander SE Low 1655 Shamoter Ow Ow 1655 Shamoter Ow Ow 1665 Shamoter Ow 16			1	5	"		
1304 Shearwater NW 1315 Greater E	1302	Wedge-Tailed Shearwater	/	/V E-	"		
1315 Greater Frigateling Strom 1321 Leach's Storm 1 5 low on Housensts 1358 Souty Stormator 1 N low Petrel 1358 Souty Shownator 1 N low Petrel 1433 Red forto Broky 7 E low 2 adults (Isppered in this peaks on mid-backy) 5 I was freely 1 Selected Broky 7 E low 2 adults (Isppered in this brown with Mosant bond; I was the follow from with West bond; I was the	1304	Shearwater/	1	NW	′′		
1321 Ceach's Storm 1 5 low Petre 1 1358 Souty Shearwater 2 5 low Shearwater 1 N / sou Patre 1 1477 Juan Fernanda 1 N / sou Petre 1 1433 Red footof Booky 7 E low 2 adults (Lappoved 35 time with speeks on mid-backy), 5 instructions in 3 different stage of plumage (3 predominantly brown with West bond; 1 morbly full which blow, brown again above, with no healt bond; 1 in between the provious two descriptions 1459 Souty Shearwater 35210 5 scaling 1502 Cooks-Bonin 1 SE /see 1503 Tropichiad 1 S /50' preshably White-tarked PHOTOGRAPHED 1538 WEDGITABED SHEARWATER SE LOW SHEARWAT		Greater Frigatebird	1	E	40'	Jæding	
1417 Juan Fernando 1 N /ocu Red footod Booky 7 E low 2 adults (I approved as time with specks on mich backy), 5 immatures in 3 different stages of plumage (3 Predominently brown-area above, with no head bond; I in between the grodions two descriptions 1459 Scoty Sharmoter 357 10 5' scaling 1502 Cook's Bonin 1 SE low 1503 Trapichival 1 S 150' presently White-total PHOTOGRAPHED 1538 Wedge-tailed Shearwater 1 NW low 1615 ———————————————————————————————————		Leach's Storm		5	10 00	- or Harcourts	
1417 Juan Fernando 1 N /ocu Red footod Booky 7 E low 2 adults (I approved as time with specks on mich backy), 5 immatures in 3 different stages of plumage (3 Predominently brown-area above, with no head bond; I in between the grodions two descriptions 1459 Scoty Sharmoter 357 10 5' scaling 1502 Cook's Bonin 1 SE low 1503 Trapichival 1 S 150' presently White-total PHOTOGRAPHED 1538 Wedge-tailed Shearwater 1 NW low 1615 ———————————————————————————————————	1358	Souty Shearwater	2	5	10 cm		
immatures in 3 different stage of planage (3) Predominently brown with Weast bonds; I monely bond; I in between the predions two descriptions 1459 Scoty Sharmater 352 10 5' scaling 1502 Cooks-Bonin Petrol 1 SE Isw 1503 Tropichiad S Iso' prebably White-tarked PHOTOGRAPHED 1538 Webstralled Sherryfile SE LOW 1544 Wadge-tailed Frequents 1 NW Iow 1615	1	Juan Fernanda	1	W	10a	-possibly a sutrac	dult
1502 Cooks-Bonin Petrol 1 SE low 1503 Tropicbird 1 S 150' probably White-tailed PHOTOGRAPHED 1538 WEDGETAILED SHEARWATER SE LOW 1544 Wadge-tailed Stearwater 1 NW low 1615 Johnston Island turned South	1433		7	F	low	Predominently brown with breast bonds; I mostly	
1503 Tropichival S 150' probably White-tailed PHOTOGRAPHED 1538 WEDGITAILED SHEARWATER SE LOW 1544 Wadge-tailed Stearwater NW low 1615	1459	Sooty Shearwater	352	10 5	scaling		
1538 WEDGETAILED SHEARWATER SE LOW 1544 Wedge-tailed Hearwater NW low 1615 Tohnston Island Turned South	1502	Cooks-Bonin Petrol	/	SE	low		
SHEARWATER SE LOW 1544 Wadge-tailed Streamwater NW low 1615 Tohnston Island Turned South Streamwater I F /	1503	Tropichisal	1	5	150'	probably White-tailed PHOTOGRAPHED	
1544 Wadge-tailed Streamwater 1 NW low 1615 Tohnston Island turned South	1538	WEDGETAILED SHEARWATE	R /	SE	(6 ()		
1615 Tohnston Island Turned South	1544	Wadge-tailed Steamuater					
1632 Wedge-tailed Stephwater 11 5	1615		1		1000		
		Wedge-tailed Stearwater	4	E	low	- Johnston Island Turned South	



DATE 5 Nov 1264
Pg.# 3

	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	an and a s	1	41-	hat	romarke	loc.
***************************************		species			Scaline	Close flock	
	1701	Socty Shearwater	Land	1		CIURE (ILL)	
	1210	3 Mearwatar	1	W	low		
	1/20	Pterodioma	1	2	(/	- avaiding ships	
			4			- avaiding sings	
	1730	Flock -				Very for out	
		great 7 rigatel D Pferoliona	3				
		Pferodiono	1			Very for out	
		Sheow In/Petul Booky	104				
		Book	1				
	1845		-			- SUNISET!	
		1					
,	1						
						7.	
			1				

07	00 1	VE.	/ Y			
time	species	#	dir.	hgt.	remarks	100
0715		-			sunities	
0727	Sheamwater/petre	/	\mathcal{N}	low		
0827		2	N	10 W		
0841	Wedge-tailed Stienrunten	,	Q1			
0847	Cook's Petrel	,	SW	low		
	GOX3/BONIN	′		1000		
	tetrel	1	N	low		
0920	TROPICBIRD	1			- SITTING IN WATER - DISTANT	
0941	Pterodroma	2	NE	10w	WHIER - DISTANT	
0944	Souty Shearwalm	5	5 W			
0946	WEDGETHILED SHEAR WATER	22	(3)			
0946		1	1			
0946	5ml. 11	,	55 W		Probably all part of	
0.952	SOOTY (?)	ľ			To fleel in last stoges	
0956	SHEARWATER GREATER	1	55 W		of RO- DK	
	FRIGRIEBIRD	2	3	1001	- Feeding,	
1	JUAN FERNANDEZ PETREL					
	SHEPRWATER / PETREL	5	0	Low		
1025			0			
1030	bird	1	59 W	water	then flew in pout of ship & sot down ogain	
1030	White-weck Petrel	1	NNE	low		
1050	Coaks Dowin Petrel	1	WNW	11		
1143	11 11	2	W	1(
1156	Large Pterndromo	. 1	NW	اد	suggested a bark-vumped Petrel but much too far away	
11 58	wedge tailed	1	SW	1(
1204	Septy? Shrute	1	5	ŧι	Lone bird; didn't the linings	
1308	Blue-faced	,	SW	to 100'	observed feeding (dove into water)	
1329	Cook's BONIN	/		10/10		
1/5-1	PETREL	3	NE	Low		
1329	JUAN FERMANDE					
	PETREL	1	W	Low		
1338	Great Frightebird	2	NE	200'ca.		
	(1 M	2	NE	400 CA		
1343		000		· A		
1350	Cooks BONIN Petrel	1	W	10w		
1404	Red-Tailed					
	Tropicbird	1	E	To 300	flushed from water	



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ime	species	NE	dir.	het.	remarks	loc.
14.42	JUAN FORNANDEZ					
	Great Frigatelia	/	C1	200'ca.		
1510	Shearwater/	/	SE			
1505	Retried Great Frigatebin Shearwater/ Petrel THAN FERNANDEZ Petrel Cock's/Bonin Petrel Shearwater/petrel Shearwater/petrel	/	SE			
1721	TUAN FEVNANDEZ					
	Petrel	/	SE	low		
1725	Geok's/BONIN	/	SE	loco		
1823	Shearunterpetrel	1	SW	low		
1825	Shearwater/petrel	1	SW	low		
1855					apparent sunset	

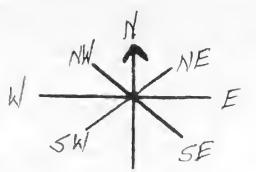
30 2/ 8 hus 5/ 113/4 hs

111/2

Schleremo.

Sooty - Sooty

	ک. ک	E	1=			
time	species	#	dir.	hgt.	remarks	loc.
0645		-	gastier effects		- hegin observation	
07/5		-		_	- apparent survise	
0724	Cook's /BONIN PETREL					
	16122	1	WNW	Low		
0730		ggdWm-ray.	gamen gamen		- stop for plankton samples	
0/44	WEGETAILED SNEARWATER	1	5 0	Low		
0745	PTERODROMA	2	0	. 1		
0750	11	1	NW	(1		
0750	//	1	5	(1		
0835	Cook's PETREL PTERODEOMA	1	0	11		
083.5	PTERODROMA	1	N	,1	- CROSSED PATH OF ABOVE Cook's & was 1/2 again as	
					Large. All Brown Above with No distinguishing Marks in	
					Large. All Brown Above with No distinguishing Marks in upper wing. UNDER-WING HEAVY BORDERS With VERY	
0840					Thin White line in center. Black 'hash' Mark COMPLETELY CROSSING UNDERWING & wide. NECK, breast, welly & under tail is	drite.
	19				BANGE SUCKNIE BARRANCE	
					The state of the s	
0941	Juan Fonandoz Pot	1	5E	Low		
6943	Sm. Pterodrong		NE	1-08		
0945	Wedge-tailed shoonwala	l	5	1.6		
0948	Shear water Petro	1	NW	1,		
0958	" / "	1	58	4-7		
1008	cook 3 /elrel		W	11		
1003	Juan Fernandez Petrel	1	N	//	Slushed hom water	
1017	wedge-tailed	,			flushed from water	
	Shearwater	1	W	1/	Dart phase	
1017	Cook's Petrol	1	SW	, ,		
1025	Cook's Bonin)	E	1/		
1027	Juan Fernander					
	Petre/	1	5 E	L /		
1033	Liq. Pterodrom	SY	5	y		
1045	Soaty (2)	,	SE			
	Shearvader	/	DE	(/		
1046	Juan Fernandez	,	SE	.,		
1	Petre/					
1053	La. Prevodroma	1	N	11		
1103	Juan Fernandez	1	SW	1	flushed from water	
	! t.fre/			"		



	4	\ <	SF		
 time	species	#	dir.	hgt.	remarks loc
1	SOOTY SHEARWARER				
1125	SHEARWATER /PETRE	23	5		Possibly A Wedgetail in Group
1204	Cooks/Bonin				The state of the s
	Petrol	1	5	low	
1311	Cooks/Borin	1	5	low	Turned N.E.
1435	shearwater petrol	1	Sw	low	Possibly a sooty sloowater; wind blown
1438	1(l	5W	low	Possibly a Pterodrama ; wind blown
	Kermadec Petual		W	low	Light phase
	Shearwatexpetrel	/	W	low	wind blown
1552	Small - Pterodroma	/	5	10 w	
1557	Juan termander	1	ے	10 w	
1635	Cooks/Bonin				
	2s. Petrol	/	Νω	low	
1708	JUAN FERMANDE	2 2			
	PETREL	2	NE	t s	
1712	11 11 11	3	0	,1	feeding type flight but wat seen to do so.
1712	Cook's PETREL	2	"	. ,	All grouped together after few minutes.
1712	COOKS/BONIN PETREL	1	n	1	
1715	RED-TAILED TROPIC BIND		1 1		
1720	JUAN FERNANDE	,	NE	Low	- Arose from Water.
1720	PETREL	1	CA	1.1	ABOVE BIRDS PROBABLE REMNANTS OF Flock.
1720	Cooks/BOHIN	,	0	į, i	REMINITIES OF PIOCK.
1720	WEDGETAILED				
	SHEGRWATER	2	NE	''	
1730	WEDGETAILED SHEAR WATER	Ttz			-> ALL BIRDS 1708 - 1740 HRS. APPARENTLY
	JUAN FARMANDE				PART OF ONE FORMER Feeding Flock WHICH IS NOW FAIRLY WELL SCATTERED.
	COOK'S PETREL	,			The state of the s
	Cuok's/BONIN				
1740	PEREL	10+			
1747	Cook's /BONN				
- OT 1	PETREL	/	NIKI	Low	
1754	WEDGETALLED SHEARWATER	2	a		
1754	SHEARWATER / PETREL	5	0	100	
1758	JUAN FERNANDEZ	2	0		
	(?) PEREL	1	0	^	
1800	Cook's BONIN PETREL)	SW	0	
	16126		~ "		

1803 WINE-NECK PETEL SW LOW PETEL WHITE-NECK(?) SW 1. 1814 SHERWITER SE 1817 Lg. Pterodroma SE 1818 Cook's PETEL NW 1818 Cook's PETEL ON 1823 Cook's Benin PETEL ON 1824 Cook's Benin PETEL ON 1825 Cook's Benin PETEL ON 1826 Cook's Benin PETEL ON 1837 CORSTREL NW 1838 CHRISTARS IS. SHERWITER SE LOW - SCHOOL OF FISH (SMALL TUNA-like) Jumping NEAR TORT BOW. 1838 PTERODROMA ! NW Low - DISTANT.	time	species	W#	dir.	het.	remarks	loc.
WANTE-NECK(?) SIN 1		WHITE-NECK	1				
1818 Cook's PETREL NW " 1819 JUMN FERNANDEZ COOK'S/BONIN PETREL CX " 1828 Cook's/BONIN PETREL NW " 1828 COOK'S/BONIN NW " 1832 CHRISTMAS IS- SHEARWARD SE LOW - SCHOOL OF FISH (SMALL TUNG-like) JUMPING NEAR TORT BOW. 1838 PTEROPROMA NW Low - DISTANT.	-		1	5W	l'		
1818 Cook's PETREL NW " 1819 JUMN FERNANDEZ COOK'S/BONIN PETREL CX " 1828 Cook's/BONIN PETREL NW " 1828 COOK'S/BONIN NW " 1832 CHRISTMAS IS- SHEARWARD SE LOW - SCHOOL OF FISH (SMALL TUNG-like) JUMPING NEAR TORT BOW. 1838 PTEROPROMA NW Low - DISTANT.	1814	SHEBRUATER PEIREL	1	SE			
1818 Cook's PETREL NW " 1819 JUMN FERNANDEZ COOK'S/BONIN PETREL CX " 1828 Cook's/BONIN PETREL NW " 1828 COOK'S/BONIN NW " 1832 CHRISTMAS IS- SHEARWARD SE LOW - SCHOOL OF FISH (SMALL TUNG-like) JUMPING NEAR TORT BOW. 1838 PTEROPROMA NW Low - DISTANT.	1817	Lg. Pterodroma	1	SE	.,	- DISANT	
1823 Cooks/BONIN PETRE! CA " 1828 COOKS/BONIN PETREL NW " 1832 CHRISTMAS IS. SHEARWARE SE LOW - SCHOOL OF FISH (SMALL TUNG-like) JUMPING NEAR 1835 - TORT BOW. 1838 PTEROPROMA I NW LOW - DISTANT.	1818	Cook's PETREL	1	NW	11		
1823 Cooks/BONIN PETREL CX " 1828 COOKS/BONIN PETREL NW " 1832 CHRISTMAS IS. SHEARWARE SE LOW - SCHOOL OF FISH (SMALL TUNG-like) JUMPING NEAR TORT BOW. 1838 PTEROPROMA ! NW LOW - DISTANT.			1		11		
1832 CHRISTMAS IS. SHEARWATER I SE LOW 1835 — - SCHOOL OF FISH (SMALL TUNG-like) JUMPING NEAR TORT BOW. 1838 PTEROPROMA I NW LOW - DISTANT.	1823	Cooks/BONINI PETRES	/		"		
1835 SCHOOL OF FISH (SMALL TUNG-like) Jumping NEAR PORT BOW. 1838 PREROPROMA I NW LOW - DISTANT.	1828	Cook's BONIN PETREL	1	NW	ιf		
1838 PTEROPROMA I NW LOW - DISTANT.	1832	CHRISTMAS S.	/	SE	Low	Savana and Tale	
1838 PTEROPROMA I NW LOW - DISTANT.	1835					PORT BOW.	
1857 - SONSET!	1838	PTEROPROMA	1	NW	Low		
	. 1857			der von der der vertreten der	The second secon		
		1					





DATE OF Wow 64
Pg.#

	,	510	J			
time	species	#	dir.	het.	remarks	loc.
0715	-	-			-Appavent senvise, about	
0737	Cook Boni Pet	12	E	1000		
0741				_	Turned approximately SE and stopped	
0744	Red-footed Book	1	w	un ed-low	Fishing leisurely off fortsides, on adult	
0145	wesge tailed	,	0	1000		
	Shearwater	1			Hat turned about 5.	
0750		-				
	Leach es/Harcour storm parel	1	NE	low	Black; small, some white on vomp, couldn't 550 which that tail forked or straight; paying no attention to ship	
0806					Turned S.E.	
0811					Moving SE Slowly	
0847	Red-tailed		(med la	h Wooppavent listing activity	
	lungic bird	1)	7		
0870			_		Turned E.	
0822	Pteradroma	1	W	low		
0824		1	_	_	Full ahead LE.	
0 \$ 25	110	1	W	low		
	Lug-Pterodroma	1	SE	10 w		
	plicarnater/Petrol		5E	"		
	Red-tail Tropiclaid	2	8	300		
0955		19	5	low		
1015	Pherodroma	1	ww			
1034	Wedge-tail Shearwater	2			- moving infront of Bow	
1232	Masked Booky	1	N	med-low		
	Cook's /BONIN					
	PETREL	,	5			
	0		3	Low	- resuled by a atch sound sile Souty Sheam alu	
1400	Bird	10	_	1-0cm	- suported by a atch sound the sooty Shears ale	
1435	Shear ate Peter	1				
141-1)	D to a Do		dill	low		
1531	1 Ptal	1	55E	"		
1536	g. rerograma	1	SE	le		
15.37	5ml. "	1	5E	,,		
1540	1/	+ `		-	- COURSE CHANGE TO NW	
1558	Cooks/Porm	1		,		
	Lo. 18/2		o E	10 w		
1604	CHRISTMAS IS.		- 1			
1615	South	1	5W	low		
10.7	Shearwater	11	5	low		
1650	Tues			,		
1630	D. +	z /	SE	10 00		
	18/16/					



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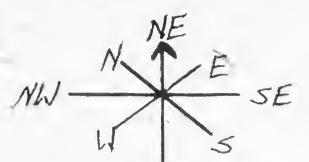
		5		E			
	time	species	土	dir.	hgt.	remarks	loc.
1658	1458	WEDGETAILED SHEARWATER		SE	Low		
	1743	Small Petrel	1	2.	low	Flow divertly into son; appeared black + small, but sun maybe affected solor visulation	
	1,250	Harcourts Leach's		NE	low	Bodies Go a Contraction	
		Tefrel (?)				Rather far out; a small, dark Oceanodroma; several Time, Hought I could a whit	
		7,				several Time, thought I caught a white	
	1831	Pterodroma	}	E	low		
	(832	Wedge-tailed Shearwater	J	SE	lon		
	1834			55	,		
	1836		R	SE	low		
	1846			76	100	And the co	
						Apparent sunset	

began observator 07,0 # dir. hgt. loc. time Sooty Shearwater 4 SE Wadge tail Shear-Pterodrom a JE 0817 Red-Tailed NE 1001 Tropicbind 0912 Shearwator Petrol low Lig. Pterodroma SW 100 Wedge-tailed Shearwater Z 0934 One of them photographed. low Pterodroma 5001 low N wedge towled 1006 Shearwater NE low 1022 Juan Fernadoz low Petre 1034 Wedge-tailed bw 1046 Than Fernandas Patrel 10 w N low Pterodroma 5 low all dark Shearwater cooks Petrel 1322 5W 10 w 1335 SW Fernandez Petrel 10 m 1427 Red-Tailed flashed from water - no retrices 54 Tropicbird (adult) 1453 Souty 5 10 W Shear water W Shearwaterpetro low. Wedge-tailed Shearwater Feeding Flock partially photographed at least I definite Juan Fernandez Retrel Large Pteradroma 5 Small Pterodroma 5 Apparently All dark shearwater Shearwater/petrel 50±25 closely packed school of flying fish leaping en mass out of water Pterodroma appeared right over school of Flying fish school appeared to be headed in NNE direction

		E	1	/ ¥			
	time	species	15	dir.	hgt.	remarks	100
1	1600	Shearwater/petrel	1	E	low		
	1608	Pterodroma	1	N	law		
		Shearwater	1	N	1000	All dark probably (No light color observed)	
	1624	Wedge-tailed Shearunter	3	3	low		
	1626	Shearwaterfreth	110	SW	low		
	1628	Wedge Tailed? SHEARWATER	1	SW	low		
FF	1634	Great Frigatebil	12	Q.	150 ca.	Feeding Flock photographed	
		Wedge tailed Stearwater			low	flock deployed in long rectangular formation; at First moved parallel	
		Turn Fernande	2		low	got up ith strip, then left moving at right	
		Large Pterodrom			low	got up of water sugle to strip	
		U				No fish observed	
	1640	Juan Fernande Petrel	2	5	low		
		White-necked				Moving toward feeding flock	
		Retrel	1	5'	low		
	1703		+ .		- ~	Turnel WIVW	
	1717	We age-tailed	20	~	1000		
		Shearwater Pt. 1		1		Ellock	
	17.7	Ptersdroma	1	IV	low		
	1742	Is Petrel	1	w	100		
	1020						
	7839	Christmas Island (?) Shearaake	1	NW	13		
						12 co A	
						7-1711 1-120	
						2 1990	
							1

time	species	#	dir.	hgt.	remarks	loc.
0719	Wedge-tailed Shearwater		NE	low		
0728	Wedge-tailea Shearwater		Q.	low	3 of them were cruising back and forth over large area west of ship 100-250 yards out during plankton drop.	
0729	7	-			apparent sunrise no varparent specific interest in fishing.	
0730					+ strip stopped for plankton drop No dropping to	
0746	JUAN FERNAND Petrel	100	SW	low	several of birds also manged on	
0740	Small Pterodn	ma /	5	low	SE side of strip.	
0815					resumed proposess NE	
0822	Wedge-tailed Streamwater	1	NE	low		
0824	small Pterodne	oras /	N	loue		
0832	2 Christmas Isla Skenwater	and (S	low		
0848			N	low		
0853	Socty Shearman	-12	.51	scaling		
0902	2 Sooty Steamund	er 18	S	scaling and low		
0901	Wedge-tailed Streamwater	1	Q,	low		
0917	Shearwater	? /	SE	low		
0923	Sooty Stiearwal	ter /	SE	low		
	Shearwater	1	SE	low		
0920			N	low		
0937			SE	scaling		
	Large Pteradre		SSE	low		b /A
1014	White-Necked Petrel	1	NE	low		
1020		1	NW	low		
1031	White- tailed Tropicbird		NE	Bus		
1101	Wadge-Triled Streamwater		SE	low		
1102	Sooty Shearun	to-22	5	scaling	definitely changed and to	
1107	11 11	10	5	0	definitely changed course to avoid flying abse to strip	
1110	Christmas Island 2	1	5	scaling low	flusked from water	
	Shearwater				N N	

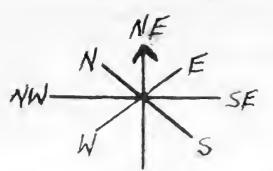
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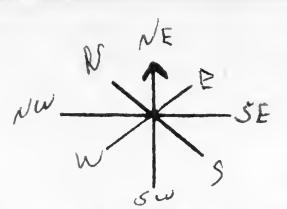
	LV		5			
 time	species	4	dir.	hgt.	remarks	loc.
1133	GREAT FRIGATEBIRD	1	E	1001		
1140	WEDGETPILED SHEARWATER	2	5	Low		
1233	SOOTY SHEARWATER	14	S	e All		
1305	Red-tailed Troplebia			_	on water did not flush	
	Sooty Shearwater		S	scaling		
				4.0		
	Kermades Retrel	1	W	low	Party above, mostly dark below: underwing mostly dayle brown, with light brown to dull white black seen in primary area; also farts of secondary wing separation between forward & rear	
135/	Sooty Shearwater	1	5W	SCATING	favts of secondary wine separation between forward + year	
1511	Shearwater	1	5	11	in rain squall	
1513	11	2	5	11		
1537	,,				et et en	
15117		1	5	1	1. 11 11	
1547	Shearmater	1	IVW	INW	11 11 11	
1603	11					
1632	Souty	1	W	100		
	Shearwater	2	5	scaling	1/ (1 -//	
1652	11	5	ک	11	a a p	
1653	Rod-Footed Booby	1	SW	100	" (sub-adu/t)	
	Wedge-tailed Shearwater	1	sw	10 en		
1743		2	NE	High		
1835	WEOGETAILED SHEARWATER		5W	Low		
1835	RED-Footed Boosy	1	5W	LOW	imm- (1st yR. Plumage)	
1942					Apparent sunset	
1140	Tern	1	Witnesdamen and		- calling	

time	species	E.	dir.	hgt.	remarks	loc.
0735					- began watch after surrice	
0736	Wedge-tail Shearwater	1	S	low		
0737	Red-tail Tropic bird	1	E	600'		
0755	Blue-faced Booby	1	G	100-200	circling over ship during plankton detail subadult collected by Gould	
08/4	Wedge-tailed Shearwater	4	Ca	low		
0829	Great Frigatebird	1	NE	200 ca.	subadult of seen capturing flying fish in front of ship	
0846	Wedge-tailed Streamwater	4	5	low	front of ship	
	Shearwater/petrel		5	low		
0856	Wedge-tailed Shearwater	2	SW	low		
0902	Leach's/Harcourt	1	5	low		
0937	RED-TAILED TROPICBIRD	}	E	_	MROSE FROM WATER	
0942	Sml. PTERODRAMA	2	E	Low		
0945	WEDGETAILED SHEARWATER	1	as	//		
1010	Wedge-tailed Shearwater	a	NE	17		
1042	11	1	5	11		
1047	Shearwater/ Petrol	J	5	11		
1053	Wedge-tailed Shearwaker	1	5	11		
1102	11	1	5	11		
1107	11	1	NE	n	Possibly break-up of feeding	
11 08	0	1	W	1		
11 10	11	1	N	(1	arose from water (
11 12	(1	3	5 0556	11		
11 14				<i>₹1</i>		1
1238	(20K2/8m)	(5	()		
1247	Cooky/Bonin Petrel Red-footed	1	N	11		
	Booky	1	Of	to loca		

ime,	species	#	dir.	hgt.	remarks	loc.
1304	White-tail Tropichird	1	N	250-800	st. circled o few time them left.	
15-27	Scoty Terns	4	N	med (100) 3 adults, 1 immature; photographed as silhousettes	
	Widge-tail Shear water	*	N	low		
		2	5	Scaling	No underwing wing knings saen.	
	Shearwctous etral		5	low	Storm to 5+5W of ship; grey, leaden seas; reduced	
	Cooks Formin Is.		W	lou	Visibility	
1557	Masker Booky	}	BAS	100'±	Immature; followed ship for 20 minutes; swung by port side then south; photographed in	
1648	Wedge-tailed Shearwater	1	Sw	tow	two individual scenes	
1629	White-tailed Tropicbira	,	NE	150'	Photographed	
1642	Red-tailed Tropic bird		SE	100'±		
1710	Wedge-tailed Shearwater	,	NE	low		
1714	Wadge-tailed SHEARWATER	,	SE	low		
1716	Wedge-tailed Stearwater	/	SE	low		
1736	Wedge-tailed Shearwater	2	NW	low		
	hloge tailed Shearwater	1	_	low	Not actively but circling as if deep Feeding Flock school of fish present	
	Shearwater/petro		SE	low	25±5 Wedge-tailed Shearwater	
1813-	Wedge-tailed Stiennwater	×	Ca	four	1 Cocks Petrel 1 Cocks Februin Petrel	
1814	Wedge tribed Shemwater	X	SE	low	Around submerged Tapanese fishing Net	
	Shearwater/pared	1	5	low		
1837	Wedge-tailed Shearwater	1	S	low		
1844	Great Frigatebird	1	SW	500'ca.	immature appears to be moving ahead of min squall	
1850		-			apparent sunset	

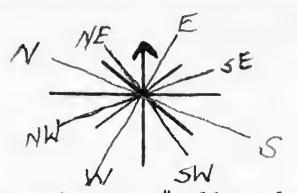


time	species	#	dir.	hgt.	remarks	100
0135				-	- COMMENCE OBSERVATIONS - MONAPPARENT VISABALITY 500 Yd, SUNRISE	
0745					~ 5700 FAR -11	
0825		-		~ ~	- STOP FOR BLANKTON SAMPLES - UNDERWAY - (VISABILITY HOW 2 Mi.)	
C	WEDGETAILED SHEARNATER	}	N	1	- APPEARED TO HAVE DARK UNDERWINGS. REST OF CHARACTERS LIKE WEDGETAIL. (POOR LIGHT CONDITIONS but Observed WELL.	
0902	SHEARWATER	-	5	100	- AT edge of RAIN SQUALL	
0923	Bonin/Cook's Petro	3	NW	lon	SAUALL	
0.924	Wedge tax					
	Shearwater	rl	W	low		
0951	Gracter Frigute	1	7	high		
1.00%	Sooty Sheardr	2	SE	Scaling	Birds cut across bow; definately turned to avoid	
loin	Shear weter Petrel	1	SW	low	ship.	
1035	Wedge-tailed					
	Shearnata	2	5	low		
1038	1.1	3	5	10w		
1042	11	1	NE	low		
1053	Sorty(2)Shearwat	-1	5	Scalin	Not underwing livings; bird all dark; close to	
1105	Cooks/Bouin Petrel	1	SE	1000	Ship	
1124	Wedge tail					
1214	Shearwalar	1	NE	11		
1223	11	1	SE	"		
. 20	Shearwater	1	5	17		
1233	Wedge-tiled Shearwater	1	E	7		
1244	Petre 1	1	ک	"	white below, lack above, mottled with white	
	Heroelpoma				very light gray, but also in sold with dark color lack of back.	e de la companya della companya della companya de la companya della companya dell
1253	Wedge-Tailed Shearwater	1	SE	Isw	maly with trong the made.	
17-53	Cooks/ponin Sete	11	5	1. w		



	time	species	<i>w</i>	dir.	het.	remarks	loc.
	1306	wedge-tailed		S	1000		
	1327	Shearwater		5	low		
	1403	11	1	N	low		
	1425	e l		5	1600		
	1427	r)		5	low		
	1447	!(1.	5	10 w		
	1450	//	1	NE	10 W	E	
CA	1605	11	1	ESE	11	- COURSE CHANGE TO EAST N-5	
	1617	19	1	SE	11	₩	
	经验						
	1715	SHEPRWITTER PETREL	1	NW	,1		
	1748	500TY (?)				- aute Pistant & dark birds. Lost from View into Trough.	
		SHEARWATER	2	5	//	Wew into Trough.	
	180Z	WELKOETAILED					
	0.44-	SHEARWATER	1	0	0		
	1847	Juan Fernandez Petrel	1	Sw	17		
	1855	, completely	Association from \$100 at France	protecting for the constraints of the fine decomposition of the constraints of the constr	For the color (to \$7 + 40 thinks before the \$40 to the	Apparent Sunset	
		1					
•							

ime	species	#	dir.	hgt.	remarks 10
0727					- Apparent Sienrise
	SHEARWATER PETREL	#	(7	40 W	
*		1	0	Low	
0956	JUAN FERNANDES	ż			
)	N	>1	
1023	Great Frigalebird			300 ca.	female
1127	Pterodroma		SE	lon	
1148	Sooty(?) Shearnata	1	50	scaling	
231	Great Frigatebird	1	E	30-40	ad 31
1438	Pterodroma	1	NE	low	
1504	Pale-footed Streamwater				Very large All dark plumaged streamwater
	Shearwater	/	5	lows	CAPTION THE 18 18 18 Marge AS Wedge
					Third Shearwater) bill light colored
					feet not observed (probably hidden by plumage) flight sluggish with no scaling or arcing observed
1507	Cook's Petre	1	5	low	observed in excellent light for about two
521	" "	,	5		minutes as bird crossed bow (less than
				"	50 yards in front of strip)
1730				'	Passad ST
17812		4	SE	()	
1801	Greater Frigal		5	bigh	
1802	wodge-to: 180			1	
1803	Shoarwall	1		low	
	1(1	W	10 W	
872	/1	2	SW	low	
1845			-		Apparent sunger
	-				
				1	
				1	



	NW		5W	5		
time	species	#		het.	remarks	loc.
0713	described against the control of the			na de la constitución de la cons	- APPARENT SUNKISE	
0823	Wedge-tailed Shearwater	1	O _f	low		
0956	Frigate bird	1	N	50'	al q	
1157	Wedge-tailer Shearwater	#	ENE	low	7 00 1 100	
	Christmas Island				as flock following with ship. Christians daland only slightly smaller & zirth	
	Shearwater	/) stiffer wing best - lold wingsmore rigid of with more of an are.	
1205	Wedge-tailed Shearwater	1	ENE	low		
	Red footed Booby	1	ENE		Skip	
1651	Sheavnater			1	Flock present until about 1210	
1554	Caok's Bonin	2	E.	low		
1706	GREAT FRIGATE		NE	100'	-18,1 3 早	
1750	PTERODROMA	1	SSE	Low		
1830					apparent sunset	

	5	W "	1.			
time	species	#	dir.	het.	remarks	loc.
0700					Probable survise	
0132	Sootyp) Shearning	1	5	scaling		
0742	11	2	5	scaling		
8814	1010	1	SE	low		
0844	Sheave atou Potvel)	1	lon		
0852						
0859	white - tail			11		
	Tropicbird	1			- Jeedin	
1011	stoan tout					
7011	shearwater/ Petre/	/	35	1000		
1054	5004	20			one individual appear larger than the rest. Thotographed one of flock.	
	Shearwater	30	5	low scaling	one industrial oppear larger than	
1059	- MC Cayer				the rest. Photographed one of flock.	
	11	1	.5	100		
1105	Souty Shearwater	1	.5	low		
1105	Wadge-Tailed	2	NE	Н	1300	
	Shearwater				Scoty Shearwater shot 450-1255 from whole Boat	
1136	11		NE	low		
1340	Glabarwasor	,		,		
1	retre!	١	E	puo		
1344	Cook's tebrel	1	SE	low		
1355	lihite-tailed Traffic bird	2	O	hiol		
1405	Red-tailed	7		high	DI (100	
1.4	luopic bud	(0	high	Thotographed	
1420	Birch	1	w	low	Seen from bridge; in sun for 5I watchers	
1435	Souty	1	ENE	10w	00 00 0	
	Shearweter		ENE	, ,		
1437	Great	1	6	400	Bhatographod)
	Frigatebird				() sweet	
1443	Wedge-tailed					
	Sheaviater	1	NE	VESE	Com water; I haveassed from above by Frigato	
1443	Sooty Gheavunt	, -1	NE	1		
1451	Sooty (-) Shearwal		SE	lon		
1459	Sooty Shearwate		5	tolon		
1515	Rod-toiled Tropicbird			5 THING	on water entire time as skip passod; appeared to	
1519	Christmas Is.			4	on water entire time as skip passed; appeared to have some food in mouth threat.	
	Shear water	1	5	1000		

15 Nov 1964 DATE 1609 - Kerzy. 1540 Pg.# time loc. dir. het. remarks Shearwater sp. Christmas Is Shearwater sp Basically dark - see #/ on reas; well photographed SENW 1531 low 1531 low See #2 ; photographed 10-W E Christm 经数 wedge-tail Sheonwater NE 1602 low Phitographed (603 scaling + Con Scoly Shearing 5 Kermadec 1609 hight Phase; flow pavallel to ship for while low WE Barely photographed (quite distant) Scoty Theaural 3 Calin KTICI ME ? 1653 Thearwater NE low Wedge-tail Shoamente 1658 low Shearcotte sp. 1702 Photographed 1715 Shearwater Sooty Shear-water low Shearwater NE 10W Wedge-tail low 1822

Basically dark; primaries quite black; white ast base of primary feethous. brown black on underwing with durker brown-black on glass of underwing, light brown on underside. Tight brown to med brown on central back; feeth field pale colored. No arching. Ratherfalous flight. Not y wite sluggish that y lover theavier than greaty Shoonwater. Underside toward grey-brown in good tight. A Christmas Island Sheanwater had come animotes carlies + I came by as close to ship in these 2 (50-60 yels); they in comparison, they all x mas much darker with no lite-thrown underparts + no whete in upper wing. Approx.

the third perhaps smaller than Wedge tail; size opinions varied; I Hought smaller.

The underneath on face, sides of nock, next of vantral; clear undertail coverts (I think pas).

Underning morely white with black (small amouth) on leading edge secondary writy pas).

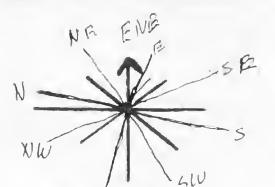
Brown black to jet black on primary ming pack (coverts offfilly appeared lighter on firmany); secondary coverts, stoack t loves back grey to grey-brown; tail dark (?)(?)

neet was write on sides and open to lite grey above; cap was dark (grey to arching; a dark -daggeling an observe); flad or large galves type flight but me arching; a guides Clight than previous shearwake sp. but a standing wangle of birds. Birds didn't tilt on diagonal in flight; a swen,

O700 commenced watch

loc. # dir. hgt. time species remarks 0645 Wedge-Tailed Shearwater 2 ENE low apparent sunrise 0705 0733 Great Frigatebird 1000 ca. male 0743 Pterodroma NE low 0759 Large Pterodrom 1 low NE medium Feeding 0801 TETNS NE 0806 Large Pteradnoma 1 low NE 0807 Wedge-tailed low Shearwater NE 0828 Shearwater 1000 0846 Wedge triled NE low Shearwater Ten 0843 Shear unterfected wedge-tailed 科 SHEARWATER NE low 0858 Leach's/Harcourt's 54 mm Petre! 1 low 5 White-tailed 0917 Tropicbird (adult) 0922 Shear water NW 0926 Scaty Tern Carry Tern Frigatebird wedge tow Shearwater Pterodrema Shearwater fletis . eight phase. 0937 Kermadec , UW Petrel 1006 Shearmater / NE Petrel 1022 Red-teil 10 Tropichind - clark phase still present 1430 1035 Black -footed A16atross 1055 white - tail - dellected by a ould; pick up took 50 minutes; lost long net-pok-Tropichira Chrokeny skips 1115

1598 NE



DATE 16 Nav 1964
Pg.# 2

			- 510			
time	species	#	dir.	hgt.	remarks	loc.
1205	white-tailed		NE		flushed from water	
	Tropicbird					
	(ad 4t)					
1833	wedge-tailed	2	w	10 w		
	Shearwater			70 0		
	Sooty Tern	1	W	,		
1337	Souty Tern	,	IV	10 ω		
1/637	Sooty Tern Jaeger sp? Golden Plaver			10 w	1700 o 4	
1240	Golden Plan	/	W	low	1 Ju M.	
1301	Masked Booky	/	6	80'	calling	
	teach: Have t	ſ	NE	low-me	d td.	
	Leach's /Harcourts Storm Petre/	1	5	low		
1328	Cooks/BONIN Petrel	,	N	low		
				1014		
1335	Christmas Island					
1339	Shearwater	1	S	low		
1400	Sooty Tern	工	SE	low-		
1464	FAIRY TERN	1	Red	medium	feeding diving into surface repeatedly that	Tanful
	Shearwater/petrel	1	N	low	ské téhi ly	
	//					
1435	Wedge-tailed Shearwater	5	Ca	1		
	Leach's/HAREOUTS			1000	Hushed from water feeding observed	
	Storm Petrel	1	CA	low		
1439	White-tailed				Olivation of O	
	Tropicbird	1	Ca	300'cA.	Rhatographed well.	
1444	Wedge-tailed Shearwater	1,	(CA	low		
	Shearwater	1		1000		
1444	Shearwater/petre	1	01	low		
1513	Wedge-tail			,		
	= learnal su		10	low		
1518	Frigate bird	\ .	ME	high	Flock - non-feeding	
			NE		wedge-tailed Sheavent on - low	
					Wooder-tailed Shearwarter - 1 - low Cooks Pet rel Agr - 1 - low	
					1 /00 4 /2 4 5 - 17	
1528	Kermakee Petre		NE	1/4	1 00/11/1	
				0	and hase	
1525	56 ty Tems	9	NE	uptdon	1.	

		ξw	-			
time	species	#	dir.	het.	remarks	loc
1543	Shoarwatow Retrel	1	5	loer		
1.624	wedge-tailed Chlavaran		SE	low		
1629	Leach's/Harecour Petrel	5	c	lon		
1632	Greater Frigate	1	NW	High		
1637	Lvedge-tailed Ellearwater Small Pterodrom	2	lu	law		
1637	Small Pterodrom	1	W	low		
1856	Sorty (3) Shearwate FEEDING F	+ \	5	low+ scaling		
1706	FFEDING F	Loc	46		Frigates - 2 High	
	Great Frigatebild	3			Terns (proposily Soots) - 35±10 - uprobum Probable	
	Terns (scoty?	35	±10		Shearwater/Petrel-Z /ow mare	
	Shear water/ Petrel	2.			The state of the s	
1715	Leach's/Harcan Storm Petre 1	15	5	/2		
1721	we age-tailed			10 cu		
	Shearwater		5	low		
1725	Newell's Shearwater	J	5	L1		
1730	Shearwater	4	5	scaling		
1732		1	5	1/		
1734	Sooty Torn	1	W	201		
1734	1 11 11	1	6	20'		
1734	White-tailed	1	6	100'		
1735		,	SE	100		
1757	Petiel					
1753	Wedge-tailed Shearwater	1	58	low		
1806	1/	1	SE	1000		

DATE 2 WOV 1964

Time at sunrise = Position at sunrise =

Time at sunset = 1800 Position at sunset = 20-48.0 N 158-52.0 W

Miles traveled from 0000 hours to sunrise =

DEPARTURE TO

Miles traveled from sunrise to sunset = 64

Miles traveled from sunset to 2400 hours = 53

1. 1145W VISUAL 158-01.5W 21-08.0 2. 1245W LORAN 158-06.0W 21-00.0	
	N
3. 1434W LORAN 158-23.0W 20-58.	
4. 1835W 05155TIN 158-58-0W 20-46.	
5. 1525 W LORAN 159-05.0W 20-43	5 N
6.	

DATE 3NOV 1964

Time at sunrise = 0645Position at sunrise = 19-59.5N 160-49.5 w

Time at sunset = 1814 Position at sunset = 15-3600 162-1600

Miles traveled from 0000 hours to sunrise = 65

Miles traveled from sunrise to sunset = 90

Miles traveled from sunset to 2400 hours = 57

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0634W	CELESTIAL	160-47.0W	20-00.0 N
	0950W	CEL. & LOKAN	161-10,0W	18-52.5N
	1155W	LORAN	161-17.0W	19-50.0N
		LORAN	161-46.0W	19-38.0N
	1505W		162-23.0W	19-21.0N
5.	1852 W	LORAN		
6.		2.4		

420V 1964 DATE

Time at sunrise = 0658 Position at sunrise = 18-37.0 164-14.5 166-05.0 166-05.0 166-05.0

Miles traveled from 0000 hours to sunrise = 65

112 Miles traveled from sunrise to sunset =

Miles traveled from sunset to 2400 hours = 53

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0643W	CELESTIAL		18-37.0N
2.	0740W	LORAN		18-32.5N
	10031	CEL. & LORAN	164-46.0W	18-25.0N
		LORAN	165-03.0W	18-18.0N
	11.50 W	LORAN		18-08,5N
5.	1455 W		166-10.0 W	
6.	1900W	CELESTIAL	100	

5NOV 1964 DATE

Time at sunrise = 07/2 Position at sunrise = 17-14.0 168-01.0 0

= 16-20.0N 169-18.5W Time at sunset = 1845 Position at sunset

3/30 W'W WART

Miles traveled from 0000 hours to sunrise = 67

Miles traveled from sunrise to sunset = /6/

46 Miles traveled from sunset to 2400 hours

TIME OF FIX TYPE OF FIX LONGITUDE LATITUDE 1. 0653W CELESTIAL 167-58.0W 17-15.5 1. 22 W CELYLORAN 168-38-0W 16-58.	
2 1122 W CELYLORAN 168-38-0W 16-58.	N
∠ •	ON
3. 14.50 W CEL THORAN 169-09.50 16-44	
2.	
5. 1610W RADAR + VIS 169-21.0W 16-3	3.5N
5. 1676 6. 1926 CELALORAN 169-18-5W 16-1.	131

The state of the s

6 NOV 64 DATE

Time at sunrise = 67/7 Position at sunrise = 14-33-20 169-06-20= 13-16.00 N 170-10.0 W

Time at sunset = 1853Position at sunset

= 6/ Miles traveled from 0000 hours to sunrise

100 Miles traveled from sunrise to sunset =

= 45 Miles traveled from sunset to 2400 hours

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0655W	CELESTIAL	169-06.7W	14-35,5N
	1040W	CEL+LORAN	169-14.0W	14-11.0 M
	1150W	CEL& LORAN	169-19.00	14-03,0N
	1600 W	CEL+LORAN	169-43.00	13-34-5N
			170-11.0a	13-13,01
5.	1922W	CELESTIAL	110	

DATE 7 NOV 64

Time at sunrise = 0.720 Position at sunrise = 12-06.00 171-35.00

Time at sunset = 18.53 Position at sunset = 13-15.00 17+07.00

Miles traveled from 0000 hours to sunrise = 63

Miles traveled from sunrise to sunset = 77

Miles traveled from sunset to 2400 hours = 36

	TIME OF FI	X TYPE OF FIX	LONGITUDE	LATITUDE
1.	07010	Colostie	171-32.0w	12-04:0N
	0937w	Celydoran	171 35,000	12-17.0N
_	11 37 W	Cel + Foran	171-31.00	12-390N
),	14 37W		171-21.00	
4 *	15 15w	Celintial	171-06-00	
ラ *				
6.				

DATE 08 NOV 64

Time at sunrise = 07/7 Position at sunrise = 14-33.00 170-12.00

Time at sunset = 1849Position at sunset = 15-21.5N 169-49.0W

Miles traveled from 0000 hours to sunrise = 50

Miles traveled from sunrise to sunset = 84

Miles traveled from sunset to 2400 hours = 49

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0656W	Celestrol	170-13.5w	14-20.0N
	1137 W	Cel 4 Loran	169-49.5w	14-45,0N
3.	1915W	Calential	169-52,00	15-23 ON

4.

5.

6.

DATE 9 1001 64

Time at sunrise = 0723Position at sunrise = 14-35N 171-79W

Time at sunset = 1900 Position at sunset = 13-36.0 N 172-46-5 W

Miles traveled from 0000 hours to sunrise = 83

Miles traveled from sunrise to sunset = //0

Miles traveled from sunset to 2400 hours = 43

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0703 W	Celesticel	171-28.0W	14-36.3N
	0 11!	Cel + Loran	17.1-53.5W	14-03.5N
	1547W	CEL + JoRan Celestial	172-49.54	, 13-39.0N
4.	1932W	Celesitar		

5.

6.

DATE 10 NOV 64

Time at sunrise = 0727Position at sunrise = 14-55.00 172-17.5 w

Time at sunset = $\frac{1}{8}$ Sposition at sunset = $\frac{15-51.00}{171-14.50}$

Miles traveled from 0000 hours to sunrise = 55

Miles traveled from sunrise to sunset = 83

Miles traveled from sunset to 2400 hours = 43

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	6710 W	Celestial	172-19.5W	14-53.5N
	1147w	Cel + horan	171-53.5W	15-14.0 AV
		Cel & Loran	171-22.3	1545.5N
>•	1631W			
4.	1915W	ist + Loren	171-12.5	15-52.51
5.				

/*

6.

Time at sunrise = 0727Position at sunrise = 16-21.5N 172-00.5W

Time at sunset = 1900 Position at sunset = 15-00.00 173 21.0 W

= 65 Miles traveled from 0000 hours to sunrise

Miles traveled from sunrise to sunset = 1/3

= 52 Miles traveled from sunset to 2400 hours

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0712 W	Celestial	172-01.0 W	16-21.0 N
	1215W	Cel+ Lokan	172-24.00	
	1900W	horan	173 21.00	15-00.0N
4.				

5.

6.

12 NOV 64 DATE

Time at sunrise = 0735 Position at sunrise = 16-05.0 173-10.0Time at sunset = 1855 Position at sunset = 16-45.5 172-14.5

Miles traveled from 0000 hours to sunrise = 75

Miles traveled from sunrise to sunset = 72

Miles traveled from sunset to 2400 hours = 3/

	TIME OF FIX	TYPE OF FIX	LONGITUDE LATITUDE
1.	6750W	LORAN	173-10.0W 16-060N
		Cel & LORAN	173-13.0W 1665.0N
	1050 W		173 05.0W 16-17.0N
2.	11 10 W	71 3 1	172 59.00 1.6-21.0N
4.	17 10	7 1 4:5	172 34.5.00 16-47.0N
5.	1600W		172 19.0W 16-45.0N
6.	1755W	1 /	166500
7	1800	LORAN	172 10-0W 16 45.0W

DATE 13 NOV 64

Time at sunrise = 0777Position at sunrise = 16-50.00

Time at sunset = 1840 Position at sunset = 16-5350 169-19.50

84 89 8/ Miles traveled from 0000 hours to sunrise

Miles traveled from sunrise to sunset =

Miles traveled from sunset to 2400 hours = 42

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
7	1-0730 W	LORAN	170-50.0W	16-49.5N
1	1-0730W	LURAN	170 38.0W	16-49.5N
	3-1145W	LORHNYCEL	170 22.0w	16-49.00
	4-1356 W	LORAN 4CEL	170 03.5W	16-48.5 N
1	5-1530 W	VIS Y LADAR	169-51.04	16-48.50
4.	6-172000	7.1	169-36-5W	1650,0N
	7-1750W	, (169.32.00	16-51.0N
5	8-190565	1 + 11		16-54,5N

DATE 14 NOV 64

Time at sunrise = 67/7 Position at sunrise = 17-3/.5 1/.5

Time at sunset = 1828 Position at sunset = 1807.00 /66-17.00

Miles traveled from 0000 hours to sunrise 95

Miles traveled from sunrise to sunset

Miles traveled from sunset to 2400 hours =

and the latest the lat	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	=703W	Celler-tect	167-50, cu	17-32.00
	6463W	-10-300 4 Cel	167-33.CW	
2.		- Co Zanz	167-2300	17-42.50
3.	1000	Toran	167 13.00	17-46-5N
4.			11 7 4/20	1756.5N
5.	15 4700		166-20.50	18-05,5N
	15 2/42 =	Liver	166 19.50	18-08.5 N
7	1704W	Foran + Coll		

DATE 15 NOV 64

Time at sunrise = 6706 Position at sunrise = 18-4950 164-33.3 W

Time at sunset = 1836 Position at sunset = 19-14.50 163 - 08-50

Miles traveled from 0000 hours to sunrise = 62

Miles traveled from sunrise to sunset = 85

Miles traveled from sunset to 2400 hours = 5/

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	C745 W	LORAN		18-50.5N
	6955W	LORAN	164-07.0W	18-57.50
		LORAN	163-0-236	U 19-02.5W
	1145 W	LURRW		1905-5N
	16 16 W			473
5.	1743 W	LORAW		19-17.5N

Time at sunrise = 06.8 Position at sunrise = 19-49.32 /6/-24.00

Time at sunset = 175% Position at sunset = 29-36.00 /57 53 50

Miles traveled from 0000 hours to sunrise = 9 9

Miles traveled from sunrise to sunset = 92

Miles traveled from sunset to 2400 hours = 53

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0745 w	LCRAN	161-10.5W	15-545N
2.	1066	C C Work		0 20-03 574
3.	114.5	Lown		,2005,5 N
4.	1355	LORAN		20-120N
5.	1600	L:RAN	160 10.54	20-19.0N
6.	1905	LORAN	159 43.0 W	20 30.0N

DATE 17 NOV 64

Time at sunrise = 0645 Position at sunrise = 20 59-00 (55-08.5%)

Time at sunset = Position at sunset =

Miles traveled from 0000 hours to sunrise = 54

Miles traveled from sunrise to sunset = 30

Miles traveled from sunset to 2400 hours =

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	C636 W	L-12/4-1)		2058.51
	07404	VISUAL		305 9.5N
	0879W	WISCIAL	155-03,00	21-04.5N
		(15HAL.	158.00.5	31-E-7-01
4.	c 85/01			

5.

6.

MONTHLY REPORT OF AT-SEA SURVEY NOVEMBER

Pacific Ocean Biological Survey

Division of Birds Smithsonian Institution Washington 25, D. C. This report is based on results and observations made on the sixteenth of a monthly series of investigations of the flora and fauna in a particular study area of the Central Pacific Ocean.

Observations covered a period of fifteen days, 2 November-17 November, 1964. The areas investigated were the same as last month.

Five members of the Smithsonian Institution Pacific Biological Survey Program participated in the survey; Patrick Gould (Biologist in Charge), David Brattley, Paul DuMont, Robert Sundell, Douglas Whitman. Alan Young and Robert Banner, engaged in oceanographic studies, represented Dr. Maxwell Doty of the University of Hawaii.

An additional feature of the trip was the 16 mm. motion photography of birds by Mr. J. D. Whitman.

TIME AND MILAGE OF DIURNAL OBSERVATIONS OUTSIDE THE GRID

Date		Total	Miles	Covered	i		Total	Hours	Spent
02			64					7.8	
03	• •	•	90					11.5	
04			112					11.5	
05			101					11.5	
13		ages was super experience a get an one of	89				$c_0=0 \stackrel{\mathrm{district}}{\oplus 1 \cdots \circ 1}$	11.2	
.14			95					11.2	
1.5	w 0		85			e 19		11.3	
16			92	-				11.7	
Total			728		-	-	 	87.7	

TIME AND MILAGE OF DIURNAL OBSERVATIONS INSIDE THE GRID

Date was	Total Miles Covered	Total Hours Spent
1		
06	100	11.6
07	77	11.6
06 07 08	84	11.5
09	110	11.6
10	83	11.5
11	113	11.6
12	72	11.3
Total	639	80.7

SPECIES ACCOUNT

A total of 23 species, plus one identifiable subspecies, was identified on this trip. Twelve species were identified within the grid and an average of 6.7 species per day was recor ded. One new species, Pale-footed Shearwater, was added to the comprehensive list of birds found within the grid.

An overall decline in numbers of birds this month reflects the fewer number of migrants passing through the area, and the departure of other species that are either preparing to breed in southern waters or have finished breeding in this area. This decline was particularly noticable in the area of Johnston Atoll. The difference between this month and the same month of 1963 is also mostly due to the difference in migratory birds. It is my opinion that the figures for 1964 more nearly represent the "normal" situation than do those of 1963.

Black-footed Albatross (Diomedea nigripes)

	Oct.,	1964	Nov.,	1964	Nov.,	1963
Grid	0		0		0	
Non-Grid	0		3		5	

The arrival of this species, for its breeding season, was about 12 days later this year tha last. It appears, however, that this species may be expected to show up in the area anytime in early November with possibly a few early arrivals appearing in October. No specimens were collected.

Wedge-tailed Shearwater (Puffinus pacificus)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	77	182	34
Non-Grid	118	501	74

The reasons for the greater numbers of birds this month as compared with October and last November are obscure at the present time. It perhaps represents a late influx of migratory birds from outside the area. No specimens were collected.

Sooty Shearwater (Puffinus griseus)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	1476	144	573
	25	904	1054

The peak of migration for this species occurred one month earlier this year tha last, but with the total period covered extended by at least one month. Poor weather conditions could be responsible for last years later and more compact migration. It is suspected that this years figures are most typical. One specimen was collected.

Christmas Island Shearwater (Puffinus nativitatus)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	1	3	0
Non-Grid	3	4	•

The total numbers of this species are so low that it is impossible to determine distribution patterns from them. The apparent increase this month may be due to imporved identification ability on the part of the observers.

Newell's Shearwater (Puffinus puffinus)

٠	Oct., 1964	Nov., 1964	Nov., 1963
Grid	0	0	2
Non-Grid	9	1	2

As with the above species the small number of observations makes accurrate discussion impossible. The low number, however, is a continuation of the steady decline in numbers for this species.

Pale-footed Shearwater (Puffinus

A bird, well seen, was identified as this species on 13 November within 50 miles of Johnston Atoll. Several have been identified from the cromwell area in the past and a specimen was taken along the Leeward Islands in September.

Bonin Island Petrel (Pterodroma hypoleuca)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	0	0	?
Non-Grid	3	1	?

As suspected these birds are rare, but perhaps regular, within the area as a whole. No specimens were collected.

Cook's Petrel (Pterodroma cookii)

	Oct., 1964	N ov., 1964	Nov., 1963
Grid	12	11	?
Non-Grid	52	47	?

These figures indicate a fairly stable population level for October and November. No specimens were collected.

Dark-rumber Petrel (Pterodroma phaeopygia)

•	Oct., 1964	Nov., 1964	Nov., 1963
Grid	0	0	?
Non-Grid	1	1	?

These figures are too small to evaluate, but do confirm the suspeicion that these birds do occurr, at least in small numbers, within the area. No specimens were collected.

Juan Fernandez Petrel (Pterodroma externa externa)

	Oct., 19	64 Nov., 19	964 Nov., 1963
Grid	45	31	15
Non-Grid	27	0	25

This years drop off in numbers of birds in November probably indicates an earlier departure date, perhaps due to weather conditions, than was expected from last years data. No specimens were collected.

White-necked Petrel & Pterodroma externa cervicalis)

	Oct., 1964	Nov., 1964	N ov., 1963
Grid	34	3	39
Non-Grid	27	0	25

Unlike the November increase in 1963, there was a sharp decrease in numbers of birds this month. As with the above race this indicates an earlier departure date for this species this year. No specimens were collected.

Kermadec Petrel (Pterodroma neglecta)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	1	1	3
Non-Grid	4	4	2

This indicates a rather stable population level for October and November as was the case in 1963. No specimens were collected.

Harold's Petrel (Pterodroma

One birds was tentatively identified as belonging to this species on 4 November, southwest of Oahu. No specimens were collected.

Leaches Storm Petrel (Oceanodroma leucohora)
or
Harcourts Storm Petrel (Oceanodroma castro)

*	Oct.,	1964	Nov.,	1964	Nov.,	1963
Grid	0		3		.1	
Non-Grid	100+		6		6	

As shown in previous reports a majority of the white-rumped Storm

Petrels observed in this area are probably <u>O. leucorhoa</u>. The figures

for 1963 and 1964 are quite comparable and indicate the return of birds

from their arctic breeding grounds. No specimens were collected.

Red-tailed Tropicbird (Phaethon rubricauda)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	27	12	37
Non-Grid	10	3	8

The peculiar fluctuation in numbers of birds of this species from month to month is still unexplainable and consequently unpredictable.

They are, however, quite regular and widely spread at any time of the year within this area. No specimens were collected.

White-tailed Tropicbird (Phaethon lepturus)

	Oct.,	1964	Nov., 19	64 Nov.,	1963
Grid	0		3	3	
Non-Grid	20	-	12	3	

As with the preceeding species the fluctuation in numbers of birds is still unexplainable. One specimen was collected.

Blue-faced Booby (Sula dactylatra)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	4	4	4
Non-Grid	11	2	2

The expected increase in numbers this month did not occurr, although within the grid at least, their numbers remained constant. One specimen was collected.

Brown Booby (Sula leucogaster)

•	Oct., 1964	Nov., 1964	Nov., 1963
Grid	1	0	1
Non-Grid	3	2	2

No change in status can be observed in this species. No specimens were collected.

Red-footed Booby (Sula sula)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	0	4	39
Non-Grid	13	. 1	11

Although the expected arrival of this species within the grid did occurr, the population lev el was far below that of 1963. No explanation is available at this time. No specimens were collected.

Great Frigatebird (Fregata minor)

	Oct.,	1964	Nov.,	1964	Nov.,	1963
Grid	4	~	15		2	
Non-Grid	70		32		13	

The vacillation in numbers of this species from month to month, as with the Tropicbirds, is unexplainable at this time. No specimens were collected.

Golden Plover (Pluvialis dominica)

	Oct.,	1964	Nov.,	1964	Nov.,	1963
Grid	36		0		13	
Non-Grid	13		1		11	

The almost complete lack of sightings indicates, as does the lack of Ruddy Turnstones and low Sooty Shearwater numbers, that migrants from northern areas were early this year, most coming through in October.

No specimens were collected.

Sooty Tern (Sterna fuscata)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	236	4	132
Non-Grid	123	270	54

The expected decline in numbers from October did occurr, however, the almost complete absence of birds from the grid as compared with November 1963 is unexplainable at this time and is probably due to sampling error. It does, however, follow the pattern observed in other species by being a month ahead of last years schedule. No specimens were collected.

Common Noddy Tern (Anous stolidus)

	Oct., 1964	Nov., 1964	Nov., 1963
Grid	1	0	1
Non-Grid	13	_ 5	4

There is probably no significant difference between the number of birds found this month than in either October, 1964 or November, 1963.

No specimens were collected.

Fairy Tern (Gygis alba)

	Oct., 1964	Nov., 1964	N ov., 1963
Grid	0	0	1
Non Grid	1	8	3

No evaluation of these figures is possible at the present time.

No specimens were collected.

ABUNDANCE OF SPECIES GROUPS WITHIN THE GRID

Group	No. birds	Birds/Sq. Mi.	est. Pop.	% of total birds
Shearwater- Petrel	545	0.43	21,300	92
.Terns	4	0.002	100	01
Boobies	8	0.01	310	01
Tropicbirds	17	0.01	660	03
Frigatebirds	14	0.01	275	02
Storm Petrels	3	0.005	230	01
Total Birds	602	0.47	23,500	100

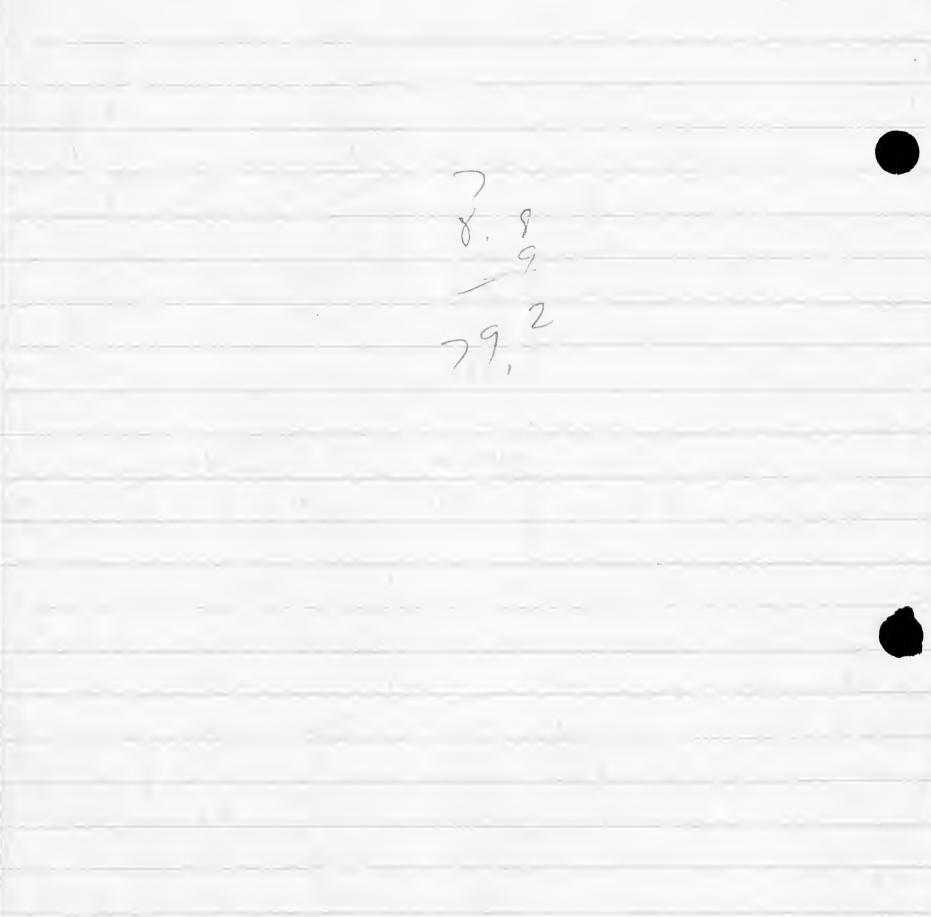
DIHRNAL ABUNDANCE OF BIRDS WITHIN GRID QUADRANTS

North		South		East		West	
No. Birds	No. Miles						
135	153	226	187	123	184	118	115
Birds per	linear mile						
0.8824		1.2086		0.6685		1.0261	

DIURNAL ABUNDANCE OF BIRDS WITHIN 50 MILES OF JOHNSTON ATOLL

Date No	. Miles No. Birds	No. Wedge-taile	No. Sooty Terns	Birds per Square Mile
05 Nov. 60	87	13	0	0.725
13 Nov. 61	13	4	0	0.11
Total 121	100	17	0	0.41

November					
fasiel Study					7
	Date	muntes	hours	m:/es	m/hr.
	NS	333	5,6	46	8, 2
	N7	692	11.5	137	11.9
	N 8	700	11.7	84	7.2
	v9	698	11.6	73	6.3
And the state of t	210	718	11.9	101.	8.5
	NII	693	11.6	90	7.8
(3)	N12	598	10.0	61	6.1
	a construct to her or fifth or they make the construction of the c				
	total	4432	73.9	592	56.0
	Average	633.1	10.1	84,6	8.0
			_		-
	Date	munites	hours	miles	m/nv.
November 1		///	7 0	7.0	
Outril Study	N	420	7.0	70	10.0
area de la companya del la companya de la companya	12	739	12.3	97	7.9
And the state of t	N3	692	11.6	83	7.4
The second secon	14	693		56	7.2
	N5	362	6.0	98	9.3
	16	689	1.3	10	7.7
1 }	113	77	11.3	99	8.8
e (i b		675	11.2		11.3
	11/14	7/1	11,9	127	9,4
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	7016		100 0 000 1000 1000 1000 1000 1000 100		
	total	5729	94.3	6127	711.0
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Novembre		10105	Market & State of the said	>	,
Inside Study					# 131.14
Cheo	Date	# Sightings	Birds	Flocks	in 2/22/65
		219-41 12-75	0,70	7 ,00.0	\
	NS	14	314	2	3 Es Tem 151
	NT	31	60	2	2814
	N8	3 7	100	2	6201
	N9	84	350	9	257 24
	N10	102	623	*21	517 211
	NII	83	331	23	1 2 12 11 11 1
	N/2	51	123	6	75 45
					,,
	total	402	1901	6467	1493
	Average	57.4		9493	213.32
				41	
	Date	Sightings	Birds	Flocks	
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MAVPERS 720 (Rev. 4-56)

ADDITIONAL REMARKS

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	U.S.N. COMMANDING			U.S.N.	NAVIGATOR	

NAVPERS 720 (Rev. 4-56)

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FOR OFFICIAL USE ONLY

NAVPERS	720	(Rev.	4-56)
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ADDITIONAL REMARKS

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MAVPERS 720 (Rev. 4-56)

DECK LOG SHEET - TYPE B

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FOR OFFICIAL USE ONLY NAVPERS 720 (Rev. 4-56) UNITED STATES SHIP

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MAVPERS 720 (Rev. 4-56)

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U.S.H.

NAVIGATOR

DECK LOG SHEET - TYPE B

USS GEO EAST MATH VAG-39 ONE DESCRIPTION + 10 W DATE THURSDAY 5 IVOVERBER 19 64

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COMMANDING

FOR OFFICIAL USE ONLY

NAVPERS 720 (Rev. 4-56)

ADDITIONAL REMARKS

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PPROVED: EXAMINED:	
U.S.H. COMMANDING	U.S.N. NAVIGATOR

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070 20 10 SL 2980 79 75 3 2000 Cac 100 B FUEL CONSUMED 0000-2400	070 30 10 24 3980 79 75 3 2000 Car 100 B FUEL CONSUMED 0000-2400	070 30 10 \$ 4 \$ 980 79 75 3 2000 Cac 100 B FUEL CONSUMED 0006-2400	0	82	-17		set	7979	79	75	3	1	CV.		4 :	4			
FUEL CONSUMED 0006-2400	FUEL CONSUMED 0000-2400	FUEL CONSUMED 0006-2400	Œ	70	20	10	Sch	1980	179	75	3	1		-		5			
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REMARKS	REMARKS	REMARKS																	
					4							REMAR	RKS				-		

U.S.N. COMMANDING

EXAMINED:

APPROVED:

U.S.N. MAVIGATOR

SOD CEELOLAL NOE ONLY		
FOR OFFICIAL USE ONLY NAVPERS 720 (Rev. 4-56)	ADDITIONAL REMARKS	
UNITED STATES SHIP		(Day) (Date) (Month), 19
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APPROVED:

EXAMINED:

DECK LOG SHEET - TYPE B

SAGE FROM	М								TO							
						١	WEATH	ER OBS	ERVAT	IONS						
W I	ND	VISI- BIL-	- WEATH- ER	BAROM- ETER		PER- URE		CLOUDS		SEA WATER	WAV	ES	P05	11101	ZONE	TIM
DIREC- TION	SPEED (Kncts)	ITY	(Sym-) Dols)	(Inches)	Dry Bulb	wet- Bulb	Amount (Tenths)	Height	Туре	TEMPER- ATURE	TION	HEIGHT (Feet)	L			
(True)				247							(True)	(1002)	λ			
				27/4	7		7						1200 L		BY	
	7.4			-	1		77			-			λ		HY _	
876	19	10	CLIC	2974	78	75	1	3000	Ca	85	070	3	2000		FY_	
872	20		/	2994	78	75	2	3000	CL	85	070		λ		RY	
075	19	10	SEL	2975	78	7.5	3	2000	da	83	070	2	LEGENO:	1 - (EL	FSTIAL	
070	21	10	Sil	5979	79	76	3	2000	Cn	85	070	3		3 - VIS		
065	20	10	SCT	2974	79	76	3	2000	CU	85	065	-3		4 - D.	к.	
085	21	10	SCT	2975	78	76	4	2000	CU	85	055	3		CURREN	T DATA	
095	23	15	SC-T	2976	78	76	4	2000	CU	85	060	3	FROM_	(7T)	/ <i>D</i> .	ate)
2:1	12	15	SCT	29.76	79	76	4	2000	cu	85	075	3	то	(ZT)		ate,
- 1	24	15	907	2976	79	76	5	2000	CU	85	085	3	SET —			
27		_		701=									DRIFT		ETWEEN FIX	ES
															1776517	
-7				37/27									MID.			
-90	r_	¿. (_ _3	3				E _C			3	MID.	λ		
	-		5016			1					112					
/				3.77										WILES.	TELLES	
	n a/	16	9												STEAMED -2400	
060	28	100	SIT	2976	79	75	7	2000	CU	85	100	5				
50	33	10	SCT	2978	13	10	5	2000	CU	85	095	5				
065	35	10	SU/	29/8	11	77	3	2000	CU	15	2000	5				
	~ /	(0	501	2100	11	17)	2000	<u></u>	03	080	5			ONSUMED -2400	
70	25	10	Ser	2981	76	73	3	2000		P.S.	CHO					
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P																
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FOR OFFICIAL USE ONLY

MAYPERS 720 (Rev. 4-56)	ADDITIONAL	REMARKS		
UNITED STATES SHIP				, 10-
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APPROYED:	EXAM	INED:		

U.S.N. COMMANDING

U.S.N. HAYIGATOR

1 75.4	SAGE FROM			•						TO						
							1	WEATH	IER OBS	ERVAT	IONS					
	WI	NC	VISI-	WEATH-			PER- JRE		CLOUDS		SEA	WAV	ES		SITION I	ZONE TIM
ME	D REC-	SPEED (Knots)	BIL- ITY (Miles)	(Sym-	ETER (Inches)	Dry Bulb	Wet Bulb	Amount (Tenths)	Height	Туре	WATER TEMPER- ATURE	TION	HEIGHT (Feet)	L		F%
1	(true)	2: 5	15	3 -2	2900			7	2000	50	A 2	(True)	4	λ		by
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	97/6	1=			10	-		-7				L =/4			CURRENT	DATA
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	1	13	10			3 27			2,850	•	5.1	056		TO	(ZT)	(Date
	064	29	15	SET	2982	83	8/	4	2000	CU	85	080	7	SET -		
	08/	28	15	SCT	2982	82	78	4	2000	CU	84	075	4			TWEEN FIXES
	077	29	15	SUI	2981	80	7S	5	2000	CÜ	85	050	Cf	MID.	1	
	067	30	10 -	327	24/8	79	14	6	1800	CU	84	075	-14		λ	
	505		-	, 1					/		-					
	EK-S										-					
3	U71					-									MILES ST	TEAMED
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	093	15	10	DKN.	2984 1904	70	13	7	2000		54	2	5			
	= 51	10	10	Ci	1550	(4)	75		1000 5000	Car	84	030	4			
	056	4 3	10	C +	398/	20	73	7	2000	0	84	030	2	Г	EHEL CO	MCHINED.
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	0/0	10	10	34	y~ (00	//			2000	CU	07	0 - 3				
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U.S.N. NAVIGATOR

FOR OFFICIAL USE ONLY NAVPERS 720 (Rev. 4-56)	ADDITIONAL REA	MARKS
UNITED STATES SHIP		(Day) (Date) (Month)
		(Day) (Dave) (Herein)

EXAMINED:

U.S.N. NAVIGATOR

APPROVED:

#1 DIRECTION (True) \$75 \$75 \$76 90 000 000 000 000 000 000 000 000 000	SPEED (Anots) 20 20 23 23 23 23 23	BIL- ITY (Miles)	SET SET SET	2985 2985 2983 2982 2982		PER- IRE Wet Bulb	Amount (Tenths)	CLOUDS Height	Туре	SEA WATER TEMPER— ATURE	WA\ DIRECT TION	HEIGHT (Feet)	P05 0800 L	ITION ZONE	T (MF
1100 (True) 675 675 675 991 990	SPEED (knots) 20 20 23 23 72,	BIL- ITY (Miles) (O) (O)	ER (sym- bols) SCT SCT SCT	2985 2985 2983 2982 2982	78 78	Wet 8010	(Tenths)	неight	Туре	WATER TEMPER-	DIRECT TION	HEIGHT	U800 L		
675	20 20 23 23 23	10 10	SET SET SET	2983 2982 2982	78 78	75 74	293	1000			1	[Feet]	1 1		4.4
\$75 \$91 590 90 010	20 23 23 23	10 10	SCT SCT SCT	2983 2982 2982		74			CU	8-4	(True)	3	λ	[Y
393 90 10	23	10	SCT SCT	2982		74		2000	CU	84	075	3	L		BY
90	72,	10	5,07		77		3	2000	00	85	0 75	3	λ		3Y
10	75			5:18,1		73		2000	CH	.675	030	3	2000		3Y
1.090	15	0	30		27	77,	3	2000	- 11	35	000		λ		3Y
:: (9¢	15			2981	77	73		3000	5- 81	25	085	E-ma	LFGEND:	1 - CELESTIAL 2 - ELECTRONI	
090	15	-	0	44F)	70					-	-			3 - VISUAL 4 - D. R.	1
	110	12	5:3	4.	97	74	6	5 115.10		535	27.5	٠,			
105	,* _/	12	FET	~ 4 C	22	0,	- 7	511	- 11	*	ð	3		CURPENT DATA	
105		p		,'	77				e u	- 11		- 1	FROM_	(ZT)	(Date)
105	15	,	1.5		80	g-a				•		5	TO	(ZT)	(Pate)
	31	10	Bkda	7984	83	76	9	2000	Cicc	8.5	090	2	SET -		
100	19	10	Bkne	3981	82	14	7	5000	Ou	85	090	</td <td> </td> <td>OSITION PETWEEN</td> <td>FIXES</td>		OSITION PETWEEN	FIXES
093	15		BENE	1//	83	79		2000	Cu	85	090	4	MID.	1	
084	17	10	SKN	29 77	84	77	B.	SERO	Cu	85	080	5			
119	14	10	SCT:	2976	8/	75	5	2000	CU	87	085	3	INT.	Λ	
779	18	10	ScT	2976	81	76	5	2000	CU	87	075	3			
1.Ext	/ -			E										WILES STEAMS	
					- 521.4					00				0000-2400	
080	15		5<1	2981	80	18	9	1	CL1	86	C650	3/			
000	15	10	201	2127	A	10	4		64	06	360	1			
720	13	10	501	2484	77	74	4		64	200	080	2/-			
112	ocist)	10	· (1	man Will	10	10	4		(3)	V/10	050	Y-		FUEL CONSUME 0000-2400)
143	46	10	>ct.	2707	4 V	160	7	SWEE	Cic	14	010	0			
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U.S.N. NAVIGATOR

ADDITIONAL REMARKS

UNITED STATES SHIP	(1)		(Month) , 19
	(Day)	(Date)	(Month)
APPROVED: EXAMINED:			
U.S.N. COMMANDING		H C N	NAVIGATOD
U.S.N. COMMANDING		U. J. N.	MALIANIA

DECK LOG-WEATHER OBSERVATION SHEET

USS_									ZONE [DESCRIPTION	ON		DATE_	THES	10 No.	1196
AT/P	ASSAGE	FROM_								TO						
							TABI	LE I								
ONE		IND	VISI-	WEATH ER	BARO- METER		MPER- URE		CLOUDS		SEA WATER	WA	VES	POSIT	TION ZONE	TIME
IME	DIREC- TION (True)	FORCE (Knots)	(Miles)	(Symbols)	(Inches)	Dry Bulb	Wet Bulb	Amount (Tenths)	Height	Туре	TEMPER ATURE	DIREC- TION (True)	HEIGHT (Feet)	0800 L		BY
01	110	22	10	Set	3984	181	76	4	3000		85		5	1200		3Y
	101	3.4	1/6	200	2 (83	0	16	-	3000	Cu	85	680	3			ΥΥ
)3	19/2	19	10				75		2000	Cer	86	870	4	2000		3Y
14	115 Ph 12-	17	10	(12	2580	79	15		2000	CYLC	86	090	4	L		3Y
)5	4.0	20	10	CIR	2978	78	75	/	2000	CU	86	685	4	λ	{	BY
6	692	25	10	SCT	2978	78	75	,2	2000	20	860	085	4	LEGEND:	1 - CELESTIAL	
7	053	500	(0)	ScT	298/	77	74	4	2000	64	8/2	080	4		2 — ELECTRONI 3 — VISUAL	С
8	100	8	۰	dies alle	7780	77	/	1	2004) — J	00				4 — D. R.	
9	105	7	10	SCT	- o ,	7 - 1	7:1	5	3,000	-27		0.8-	201		CURRENT DATA	
0	j : , =,	7	,,	, r	1885	1.		- 2	-3/7-1-		6 29	1750		FROM		
1	1	-1	1	° p 1	2 986	-275	-,	7						то	(ZT)	Date)
2	(1/4)	19	10	5/2	2984	010		8	1700	ce'	65	0.60	4		(ZT)	Date)
	NOO	10	(C	;(Y)U	-107	18	75		1100		05	080		SET		
	OP!	4		0		-1,0	* >	(F)					,		OSITION BETWEEN	FIXES
3	300 m		/(_	1:31	2	5.5	7-	8	n-n	1			7			
1	100	33	10	BRA	2474	8/	15	0	1700	CH	651	080	5/	MID. L_		
	080	36	10	R	5979	81	75	8	Acc	CL	85	080	4	MID. λ_		
	015	97	Co	R	5980	80	75	10	1200	5.7	83	075	3			
'	095	2-1	8	P	298/	78	78	10	1500	57	ect	090	2			
3	640	30	8	33 KM	2981	76	74	9	1500	Cor	Cut	P.CIC-	- 3		CURRENT DATA	
9	1054	7:-	8	7.7.4	2482	76	74	9	1500	57	54	013	3	FROM		
) -		1-1				-25	12				0 1			10	(ZT)	Date)
1	595	/ /			2984	16		7	2000	= 11	84	040			(ZT)	Date)
	- 05	17	,	Set	2985	The	72	=	7 7:25	100	S.A.	090		SET		
2	185		10	< ° 7	2986	16	7.3	4	5 CC.	The	500	C-= 10	and .	DRIFT	OSITION BETWEEN	FIXES
3	035	1:7	10	ET	2997	76	73	2/		· Poss		10				
4	CAS"	15	10	SCT :	2985	79	75	4	2000	ST/24	64	200	3	MID. L		
								(MID. λ_		
							TABLE									
		Dog	UTION .	05.0445		NOPT		SERVATIO		PRES-					CHOCKET DATA	
NE O	THE !	ay POS	NOITION (OF SHIP	TIME	Total	WIN	Visi-		SURE A	RD I	CLOUDS			CURRENT DATA	
YNO	PTIC	tant	atitude	Longit		Amt	Direc- tion	Speed ty	Present Pas	Daio.	nt of louds ded)	of C	Type C _M (0.9) H (0.9)	FROM	(ZT)	Date)
SERV	VATION (1)	-7) (0-3, (MT) 5-8) ar	Degrees id tenths	(Degre	es ths)		(True)		(00-99)	rected	Amount of C Clouds L (Coded)	Height C (Coded)	Type CM (0.9) M Type CH (0.9)	то	(ZT)	Tate)
1		2 3	4	5	6	7	8	9 10	11 12		15	16 17	18 19	SET		
		YQ	Lalala	Lotol	o GG	N	dd	ff VV	ww W	PPP TI	Nh	C h	CW CH	DRIFT		
				1										PO	SITION BETWEEN	IXES
														MID. L		
														MID. λ		
Ship	3-HOU PRESSU TENDER	R JRE ICY	SIGNIFIC					WAVES		WAVES		ICE		A	AILES STEAMED	
1 70	_ tic				Indicator Se Vi	a Poin	20	Direc-	- 5 D	irec-			o uo		0000-2400	
Speed	(0.9) (0.9) Amount	(mb and tenths)	Amount (Eighths)	Height	Indix		Indicator	tion pour		Period so	Kind	Effect	Distance			
-	0 .				o F		(00-36)	(00	0-36)						
2 v		23 24 pp 8	25 2 N _S 0		28 29 0 T _s T		31	32 33 dwdw Pw				40 41 K D;	42 43			
		8		3 3	0	3 0 0	1	UWUW TW	1	WW W	W (re		•	
		8			0		1		1					FL	JEL CONSUME	
		8			0		1		1						0000-2400	
-		8			0		1		1							

EXAMINED

DECK LOG SHEET - TYPE B

				<u> </u>								11-5		/ (): 1/	7	<i>'</i> (
USS _							ZONE	DESCRIPT	ION	DA	TE	VET.	(Date)	()	Month!	19	(6)	
AT/PA	SSAGE FROM	4								TO								
		4.00					1	WEATH	ER OBS	ERVAT	IONS							
ZONE	WI	ND	VISI- BIL-	WEATH- ER	BAROM- ETER	TEMF	PER- URE		CLOUDS		SEA WATER	WAY	V E S	4	OSITION O	ZONE	TIME	
TIME	DIREC- TION	SPEED (Knots)	ITY (Miles)	(Sym-	(Inches)	Dry	Wet Bulb	Amount (Tenths)	неight	Туре	TEMPER- ATURE	TION	HEIGHT (Feet)	L		b.	Ύ	-
01	(True)	15	10	BKK	2985	78	34	Cos	1800	STEU	8:5	190		λ_		B	Υ	-
02	080	15	10	13/4	and)	75	74	4	1700		-	0.50	3-	120		£	Υ	-
03	180	12	15	5kl	29821	79	74	6	150°	ahl	Es	C. E. C.	5	λ_		В	Υ	-
04	071	17	10	sct	3983	80	95	3	3000	cu	85	070	37)	200 L		B	Υ	_
05	068	15	10	Sct	3981	81	76	3	3050	Cu	84	070	4	λ_		B	Υ	-
06	073	18	10	sct	2980	79	75	3	3000	Cu	84	070	4	LEGEN	ND: 1 - 0	DELESTIAL ELECTRONIC		
07	082	13	10	Scot	3981	81	75	3	2000	Ci	85	075	3			VISUAL D. R.		
08	070	15	8	Brix	2982	79	73	6	2000	Ci	8-4	083	3		CHR	RENT DATA		
09	675	75	3	BAN	2984	77	74	3	2000	CU	84	080	3			CENT DATE		
	090	25	10	BIN	2785	70	13	6	2000	C-U	87	085	3	TO.	(ZT)		(Date)	-
11	090	25	10	SIT	2934	11	13	2	1500	CU	87	090	5		(ZT)		(Pate)	
12	090	1-1	· _	ů,		30	/ /		200	-:					FT			-
	030	16-	10		2781	5.1	75.	6	200	- 1	5.4		0		POSITION	BETWEEN	FIXES	
15		/ L*			2978	21	747	9		EN	3-24	(-10)	11	MIC). L			-
16	110	14	10	BKN	1975	94	76	8	1800	C4	84	090	4	MID	λ. λ			-
17	096	20	10	Bt N.	3976	81	76	8	3000	Cu	54	100	3	L				
10	110	18		362	3977	80	77	9	5000	Cu	85	120	3					
19	076	22	100	BEN	39 78	81	77	9	3000	Cu	85	120	3			S STEAMED 100-2400		
20	080	27	8	BKN	2978	77	72	9	2000	CU	85	100	7					
21	172	19	8	Blay	2979	77	75	9	2000	CD	85	160	4					
22	100	20	8	OVC	2481	77	76	10	2000	57	85	690	4					15
23	105	2/	8	orc	298-1	77	75	10	2000	57	83	095	4			. CONSUMED 000-2400		2
24	125	73	10	SVL	297	7-1	16		/4.1/-7	,	~	/20	7					
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APPROV	ED:									EXAMINED:								
						U.S.1	V. CC	DMMAND ING							U.S.	N. MAVI	GATOR	

U.S.N. COMMANDING

FOR	OFF	10	:	AL	USE	ONLY

NAVPERS 720 (Rev. 4-56)

ADDITIONAL REMARKS

UNITED STATES SHIP	(Day) (Date) (Month)
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APPROVED:	EXAMINED:
	U.S.N. COMMANDING U.S.N. NAVIGATOR

DECK LOG SHEET - TYPE B

uss -							ZON	E DESCRIPT	TION	DA	TE	(Day)	(Date		ath,	, 19	1
AT/PAS	SSAGE FRO	М								T0		(134)	· LATE	7.17	T [A ,		
								M/E A TL	IER OBS	EDVAT	IONIC						
						TEM	PER-	VILATI		CRVAI	10143			0.10	17 (7)	7.24.5	7.11.5
ZONE	DIREC-	ND	VISI- BIL- ITY	- WEATH ER (sym-	ETER	AT	URE		CLOUDS	1	SEA	/AW	/ES	0900	ITION	ZONE	THE
INE	TION (True)	SPEED (Knets)) bols)		Bulb	Bulb	Amount (Tenths)	Height	Туре	TEMPLR- ATURE	DIRECTION (True)	HEIGHT (Feet)			HY	
01	12 =			7	-7	6							7	1200		BY	
02		73	1 3	MAIN	2975	-			Jeffe		84	12-3				EY	
03	12.7	- /	#3 #3	1	1	/	76	10	1:	120	1	120	4	2000		EA _	
04	120	35	700	141/10		16	74	0	150	Sifess	Ed.	120	4	L		BY	
05	120	20	8	\$ let		100	7.6	8	1500	5/00	80	120	8	λ		EY	
00	120	01	0	13/1	2973	11	75	8	1600	3/0/1	84	(20)	5	LEGEND:		CTRONIC	
07	120	30	0	O.S.	7/0	17	10	The state of the s	1600	3/00	84	120	6		3 - VIS 4 - D.		
08	120	21	8	900		80	76	10	2000		85	110	5		CURREN	IT DATA	
10	120	98	10	ova	2780	80	13	10	5000	56	88	110	-5	FROM_			
11	120	23	10	OUC.	1902	0/	7/	10	2000	57	84	100	6	TO	(ZT)	1 De	ite)
12	122	11	18	000	2983	77	76	10	3000	ST	821	100	3		(ZT)	(De	ite)
13	107	14	8	arc	198-1	70	7,-		2000	577	00	070	5	SET			
14	(265	-14	8		2970	CM CM	70	10	2000	STI	04	man	,	P	DSITION E	ETWEEN FIX	ES
15	080	17	8	OXC	2971	79	ファ	10	2000	ST	612	1086	5	MID.			
16	09.4	1 =	Q	1.00	6-111	-,5	20		2000		3	000		. 1410. 7	\		
17	15	18	10	BEN)	2973	Sil	50	100	2010	2 1 2	85	Elao	£.				
10	- Full	,	1	A	- (53	7.7	s°	0		5	11:					
13	576	18	8	pm.	24		0000	100	6	W.	2	16.	Ec.			STEAMED	
20.	080	30	7	R	2984	79	76	10	1000	57	83	080	6		0000-	-2400	
21	075	20	10	Ove	1985	30	76	10.	J 5000	57	84	085					
22	079	38	8.	OUL.	3985	80	75	10	1500	57	84	080	3				
23	082	35	8	ove	5986	81	74	10	1500	57	83	080	6			DNSUMED	
24	136	12	8	ox	2987	79	75	10	1500	57	86	136	6		0000-	-2400	
									REMAR	RKS							
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ADDITIONAL REMARKS

UNITED STATES SHIP			(Day)	(Date) (Month) , 19
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APPROVED:		EXAMINED:		
	U.S.N. COMMANDING			U.S.N. NAVIGATOR
	U. J. H. CUMMANUING			

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											-		4V (2 2001/5000
USS -							ZONE	DESCRIPTI	ION	DA	TE F	17/1/1/	(Date)	3 IV OVEMBER, 19 64
AT/PA	SSAGE FROM	4								T0				
WEATHER OBSERVATIONS														
				1				WEATH	EK OBS	EKVAII	ION3			
ZONE	WI	ND	VISI- BIL-	WEATH- ER	BAROM- ETER		PER- JRE		CLOUDS		SEA WATER	WAV	/ES	PUSITION ZONE TIME
TIME	DIREC- TION	SPEED (Knots)	ITY (Miles)	(Sym-	(Inches)	Dry	Wet Bulb	Amount (Tenths)	Height	Type	TEMPER- ATURE	TION	HEIGHT (feet)	Lt; Y
01	(True)	13	01	BKIN	1018-1	18	75	9	2000	SKEW	85	125	- ,	λΒΥ
02	088	15	0	OVC	2983	70	ブ	10	2000	C: T	0	088	5	1200 L
03	088	10	C	R	1085	77	74	10	2000	ST	Sit	135 8	4	λ8Υ
04	090	13	3	-12	7100		-71/		12	- / /	- 1			2000
05	0%	160	3	OVC			7.1		1.5	-1	-3.22	1		λ
06	1,75	1=	7	., 1 .	9.26		- P -)	•)	17.		0 1	0 4	0	LEGEND: I - CELESTIAL
07	370	1	-	,	2.0.35	. ·	7.0 00	->	f = .	-	· ,		-	2 - ELECTRONIC 3 - VISUAL
08	1991)	31	10	KKL.	12988	80	76	8	1600	55.4	64	090		4 - D. R.
	085	16	10	5/8/	2989	78	75	ż	1600	5/211	80	090		CHRRENT DATA
10	May 1	20	si.	BIN	2991	7,0	74		1600	5/2//	84	090	4	FROM
11	085	A st	10	The	0991	10	70	5	600	54-11	BU	343	2	$TO = \frac{(2T) \qquad (Date)}{(ZT) \qquad (Pate)}$
12	080	25		81-2	J69()	8	76	9	1000	Cin	N3	090		SET
13	356	1 V	101	2K2	2981	SIL	77	5	2000	Cu	23	0590		DRIFT
1 4	0 3	10	10	2/2/	7593	87	Lo	7	Jece	Ca	24	090		POSITION BETWEEN FIXES
15	050	50	10	BEN	2993	81	76	700	5,000	Ca	CK	050	5	MID. L
16	088	10	20	BKN	2982	80	76	6	2000	CU	800	6906	9.4	MID. A
17	080	15	20	BKN	2982	80	76	6	2000	CU	83	095	4	
18	089	1="	20	PRV	2982	7.1	76	1-	2650		85	075	3	
19	050	13		Pin	000	78	-ref	7	2000	CU	83	050	3	MILES STEAMED 0000-2400
20	094		10	RVe /	2987	79	75	7	1800	Cal	83	(190)	3,	
21	099	18	10	EN	1000	78	24	7	1830	CH	45	090	3	
22	199	18	16'	REAL	2000	78	70	6	1800	CU	55	090	4	
23	077	13	16	Re	2991	73	うし	6	1800	CL	85	090	ef	FUEL CONSUMED
24	075	21	,0	Set	3990	79	75	4	2/000	se	85	090	5	0000-2400
									REMA	RKS				
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APPRO	VED:									EXAMINED:				

U.S.H. NAVIGATOR

NAVPERS 720 (Rev. 4-56)	ADDITIONAL	. REMARKS		
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APPROVED:		(AMINED:		
THE FLUI				
	II S N COMMANDING		11 ° M	NAVIGATOR

FOR OFFICIAL USE ONLY

DECK LOG SHEET - TYPE B

			<u> </u>			ZONE	DESCRIPTI	ON	DA	IL QI	(Day)	(List of)	(Mon	th)
ASSAGE FRO	M								T0					
						\	VEATH	ER OBS	ERVAT	IONS				
W	IND	VISI-	WEATH-		TEMP			CLOUDS		SEA	WAV	ES		TION ZONE TIME
DIREC-	SPEED (Krois)	BIL- ITY	ER' (Sym-) 201s)	ETER (inches)	Dry	Wet Bulo	Amount (Tenths)	Height	Туре	WATER TEMPLR- ATURE	DIREC- TION	нЕТЬНТ	L	try
(True)	57	/0	Set	2990	\$ /	77	« I	4000	5°C	8-41	(True)	(Feet)	λ	EY
27	72	10	Sch	5589	82.	76	2	2000	50	84	120	5	1200 L	EY
077	25	10	Set	1589	81	75	1	2000	cu	84	120	./	λ	BY
097	21	10	Sct	2988	74	14	2	2000	ca	84	090	3	2000 L	
092	2	10	SCT	2990	78	74	2	2000	CO	84	095	3	λ	8Y
097	23	10	SET	2989	77	74	-	2000	60	84	690	3	LEGEND:	1 - CELESTIAL 2 - ELECTRONIC
090	20	15	SCT	2991	•	10.	2	2000	CU	84	090	3		3 - VISUAL 4 - D. R.
090	1.7	<i>l</i>		P	j			222	- /	0	1700			CURRENT DATA
	p		p-	70	- 0		/	9	= 4				FROM_	
12,1	12	10	C T	9 Gap 2	130		1	1800	57	85	1. Co	2	TO	(ZT) (Date)
06/	151	16	Set	9907	P. T.	nel		1800	7	65	080	7	SET	(ZT) (Nate)
Act	15	10	SOT	57401	87	74		18cc	2	635	250	300	DRIFT	
061	1.5	10	501	2991)	62	74	5	1800	7	63	C80	3	P(DSITION BETWEEN FIXES
Clol	15	10		2986	82	94	.3	Ecc.	57	85	068	3	MID. I	
060	20	10	5:4	3-988	81	75	3	3000	Che	83	080	4	MID.	
086	16	15	SCT	2989	77	73	5,	2000	CU	84	080	3		
062	12	15	SCT	1990	77	7.2	7	2000	00	84	075	2		LILLED OTELLED
053	20	10	5ct.	2992	7)	72	3	2000	Cu	S. el	075	3		MILES STEAMED 0000-2400
052	1 4	12	Site	2993	77	72.	3/	2000	Cu	8 4	0 /5	3		
037	12	10	54	3574	17	73	4/	3000	com	85	0 /3	3		
036	10	10	Scrts	2/195	17	751	W	3000	111	85	080	3		FUEL CONSUMED
030	12	10	SCT	.49.3	79	701	4	2000	C4 C1	2 4	- Ec	.>		0000-2400
CIO	. 5			~110	e constitution of the cons			B. C.						
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ADDITIONAL REMARKS

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APPROVED:	EXAMINED:
U.S.N. CC	MMANDING U.S.N. NAVIGATOR

DECK LOG SHEET - TYPE B

USS _		i li	1	Q F	1. 4. 4		ZONE	DESCRIPTI	ON	DA	TE	SLIV	(Date)	140)0V	, 19	24
AT/PAS	SAGE FROM									_ T0							
								WEATH	ER OBS	ERVAT	ONS						-
	W h	. D	W151_	WEATH-	BAROM-	TEMP	ER-		CLOUDS		SEA	WA	V L S	₽U5	40111	ZONE	LIVIE
ZONE TIME	DIREC-	SPEED	BIL- ITY	ER (sym-	ETER	Dry	Wet	Amount	Height	Туре	WATER TEMPER-	DIREC- TION	HEIGHT	L18	52.0	N HY	2.4
	Tion (True)	(Kno:s)	(Miles)		(Inches)	Bulb	Bulb	(Tenths)			ATURE	(true)	(Feet)	x 16	0425	JOW BY	2,4
-	040	12	10	SCT SCY	240	71	13	4	1800	CL	85	('d)	3	1200 L		BY	- = -
03	û 3.5°	17	10	SCT	2988	フフ	73	5	1000	cel	85	080		λ		BY	
	029	10	1	5ct	2988	78	73	4	3000	CLL	8.5	110		2000		6Y	
	c 35°	12	10		2589	76	/	3	20,00	50	-6-1	110	3	λ		BY	
06	039	13		Sct	3989	77	74	3	2000	Char	54	110	4	LEGEND	: 1 - CE	LESTIAL	
07	037	11	10	Set.	3991	79	25	3	2000	Ca	54	100	3		2 - EE $3 - VII$ $4 - D$		
08	065	10	15	SUT	2999	77	75	5	2000	CU	83	675	2				
09	070	13	15	SCT	2992	77	75	5	2000	C-C3	83	075	2		CURRE	ATAD TH	
10	670	10	15	SCT	2993	73	72	5	2000	CU	83	075	2		(7.T)	ĺ	Date)
11	070	11	15	SCT	2993	76	71	3	2000	CU	83	072	2	TO	(ZT)	(Date)
12	570	9	15	-7	2991	76	12	5	7000	- 84	3=	072	_6	SET -	Γ		
13	270	7	15	67	29-9	7%	and it	•~>	, (=		2.	272	15.		POSITION E		XES
	070	9		-E-y-		76	72	.3	1000	CH	87	2.7	2-	MID.	L		
	70 EVac	9	15	50 2-	2986.	76	72	3	2000	CU	83	7.7/)	2	MID.	λ		
16	5119		10	20/	2109 5901	77	74		2000	200	84	C. J. K.	3 2		•		
18	07	10	10	DKN -	56,07	-75	74	6	2000	Cu	51	5 21	3				
19	1/1	0	111	E L	=1600	00	75	2	4000	200	35-4	0.00				STEAMED	
20	045	12	15	SCT	2991	7.7	74	2	2500	CSI	84	0606	2		0000)-2400	
21	057	15	15	SCT	2992	75	72	3	2500	CV	84	0630	2				
22	038	14	12	SCT	2993	74	70	3	2000	cu	85	060	2				
23	071	16	12	SCT	2993	74	70	3	2000	cu	83	095	2			CONSUMED	
24	055	10	13	SCT	2492	77	71	4	2000	Cu.	83	060	af			D - 2400	
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PPROY	ED:					U.S.		OMMAND I N G		EXAMINED:					U.S.N.	NAVIG	

NAVPERS 720 (Rev. 4-56)

ADDITIONAL REMARKS

UNITED STATES SHIP			(Day) (Date) (Month)
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			E-12 - 2- 2/2
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[17-12	=== (11) 41	3/9///0	7-12=1-3
	- (21)(2)(2)	11116.	1-12 = 2-2/2
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. = 1 = 1	1-1- 1-2	/	
7-2		-1-0	
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NAVP	ERS	720	(Rev.	4-56)	

USS TYCLEGE!	ZONE DERIPTION	DAT	E (Dav)	Mate!	/ Month!	, 19
AT/PASSAGE FROM		TO		d		

WEATHER OBSERVATIONS

ZONE	WI	ND	VISI- BIL-	WEATH- ER	BAROM- ETER	TEMP			CLOUDS		SEA WATER	WAV	, F.C.	2051 0800	TION ZONE T
IME	DIREC- TION (True)	SPEED (knots)	ITY (Miles)	(Sym-	(Inches)	Dry Bulb	Wet Bulb	Amount (Tenths)	Height	Туре	TEMPER- ATURE	DIRECTION (True)	HElGHT (Feet)	1	——————————————————————————————————————
01	1	1 7	d g	. 7	2995			4		64	c	•		1200	
02	05	0	10	· < 1	7 7 = 1	7.7	-	P-	I eve-	17	Ш-	0.6c	-		BY
03	060	, -	12	- 1	2150		· -		2-0 i7a	- 11	5			λ	
04	260		10	ScT	2987	76	72	5	2000	66	84	0.90	الت	2000	EY
)5	060	15	10	SET	2786	75	"./	5	2000	CU	84	370	4	λ	FY
)6	666	15	10	Sci	2987	74	71	5	2000	cu	Ed	\$70	4	LEGEND:	1 - CFLESTIAL 2 - ELECTRONIC
7	760	12	10	SCT	2988	7.3	70	5	2000	261	54	670	4		3 - VISUAL 4 - D. R.
38	04	110	LA	Sc	3970	76	72	3	300	and	82	040	~		
)9	052	12	-10.	Sel	- LG 0	TH	73	3	500	(in	2	0613	3		CURRENT DATA
10	055	10	10	Sch	3999	80	73	2	2000	du	55	04)	FROM_	(7.T) (Date
	050	6	103	.5c+	399	200	74	12.	5000	Ca	84	0-10	Zan	1 TO	(ZT! (Dat
12	357	13	15	SCJ	2988	80	74	2	2000	CU	83	045	2	SET	
13	600	13	15	ScT	2957	77	7/	5	2000	CU	83	020	2	DRIFT	OSITION BETWEEN FIXES
4	066	13	15	SCT	2986	78	7/	4	2000	Cil	84	(120	2		
.5	066	15	15	BIN	2986	80	73	7	2000	CU	84	000	2	MID.	
16	067	14	12	EKN	2985	79	73	7	1800	Cu	83	020	2	MID.	Λ
7	Das	j-4	10	(5KP)	2988	77	72	7	1800	5dl	8.3	620			
Z	1-69	O e-	1	F.ER.	488	75	71	7	180	cy	84	() ()	-		
19	CLE	12	10	Exa	2990	71	71	7	1800	CU	87	020	2		MILES STEAMED 0000-2400
20	A 75	.9	10	Bhy	3992	76	72	6	6-5	Qu	8-4	020	3		
21	1	,/'e	g g	r .							/				
22		Ť	1.0	3//		0	1-1		4						
23	$\underline{\varrho} \leq \gamma$,			1708			7							FUEL CONSUMED
24	060	4	10	3/4	= 44	78	7.5	7	Jano.	06	84	6 (5		0000-2400
		/							REMAI						

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1	FOR FIREWRIEY WEATHER	· RE
		RAJURT
	FOR HOURLEY WEATHER	TE CRIZE LO
	FLEET WENTHER CENTER PAIR	
	VAC-39 13	AN AIL
	WHITE WHILE IN PORT FEARL HARBOR,	REZERRA TO
	ALTWENCEN PEARL FOR HE	aly Withthin Ruffer
APPROVED:	EXAMINED:	26761
	II S M COMMANDING	U.S.N. NAVIGATOR

FOR OFFICIAL USE ONLY

NAVPERS 720 (Rev. 4-56)

ADDITIONAL REMARKS

UNITED STATES SHIP			(Day) (Da	ite) (Month)
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	U.S.N. COMMANDIN	N.G.		U.S.N. NAVIGATOR
	O. J. R. COMMANUIT			ALL CONTRACTOR

DECK LOG SHEET - TYPE B

S _				-					ON			(Day) (Date	(40	enth!
PAS	SAGE FROM					·		A 7500 A 0000	FD CD:	_ TO	10115			>
						TEM		VEATH	ER OBS	ERVAI	IONS		70	CITION 70NE EI
NE ME	DIREC- TION	SPEED (Knots)	BIL- ITY	WEATH- ER (sym-	ETER		Vet	Amount (Tenths)	CLOUDS Height	Туре	SEA WATER TEMPER— ATURE	TION MEIGH	0800 L	SITION ZONE TI
1	(True)	.,		1-		777	73	9	1980	Wen		(True) (Feet)	λ	
	000	4	18		2992		71	8	1800	e Ten			1200 L	BY
	070	4	19		2991	76	72	8	1800	Thy	3.3	25 2	\ \ \ \ \ \	BY
	070	6		SCT		75	7)	2	2000	CU	83	080 1	2000	
-	670	6		-	A -	-	-	2	2000	CU	82	060 1		
		-	20		2990		Ro-		2000	CU	81	053 1	LEGEND): I - CELESTIAL
	050	5			-2993		70	2			80	035 1		2 - ELECTRONIC 3 - VISUAL
	065	- Series	13	50/	2993	X	77	2	2000	cd	×3_	035 /		4 - D. R.
			155	2001	219/2	10	18		26'00	2 4	02	0.00 /		CURRENT DATA
													FROM	
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														POSITION RETWEEN FIXES
								· · · · · · · · · · · · · · · · · · ·					MID.	L
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														MILES STEAMED 0000-2400
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ADDITIONAL REMARKS

NAVPERS 720 (Rev. 4-56)	ADDITIONAL REMARKS					
UNITED STATES SHIP					(Month)	19
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E LAT	LONG	FRES WEA	VIS	SIP	DRY 18	DEW PY	HIMPAG	TIL SKY	OPA-SKY	WAVES	SHA TEMP	WIND S	WIND D	SELP CUMBE/SE
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			.0		•76		96	-3		860 9	1 84	4/	080	12099 / 2
1 - 010	738 - 6360	307	10	110	100		9/	1 3	1	060 3	84	6	100	290 / 10
71-60	1 135-07W	Det.	10	10	01	7/2	87	2		0000	84	6	100	370 11
3	758-182	SCF	10	10	100	77	9/	2		10603	84	7	080	32/2° 10
3450	2 1 7 240	567	10	10	00	57	5/	3	117	1065 3	84	14	080	2470 10
0 20 - 30	1/158 - 570	SET	10	10	8/	72	75	3		1005 3	83	-5	067	347: 1
20 30	8N158-50W		10	10	178	74	87	3		065 3	33		068	247
0 30 - 4	51 159-010	Sof	10	(11)	78	66	67	3		260 3	83	3	067	5470
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0 58 39	CONTRACTOR OF THE PARTY OF THE		10	10	76	67	1 7/	3		1065 3	83	4	1061	1347 /
0 20 35	2 159-232	set.	10	10	75	66	1 70	I		1065 3	83	4	1064	12470
0 20 32	1 159-312	1 1	10	10	75	66	74	3	111	005 3	83	1 4	065	1346
DEWARKS	8 159-40 W	150 t	10	1 10	75	73	! 91	1 3	! ! !	065 3	1 84	1 8	1065	12460 10

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TIME	TAT	LONG	PRES WEA	VIS	SLP	DRY D	DEM PT	aum/o	TI SKY	OPA SKY	WAVES	SHA TEMP	WIND S	WIND D	SHIP COURSE/SFD.
01.00	200 361	1.55 - 46 w				76				,					
0200	10 - 33 N	1159-5500	6			76								8	,)
0300	20 - 19N	160-031										4-0			
0400	20 - 16 N	166 - 12N	/											4	
0500	30 - 13 N	166-210				7.5									
0600	20 - 10 d	1100 - 39 N				5									
0700	30 - 65 ×	160-382													
0800	19-59.0d	160.51.2 W	-								C				247 / 10/6
ngno	19:53 N	161-57 00										7			
1.000	19-52-14	161.120					1.00				٩				·
1100	19-501	161-16 W				* 1						1-1		(
1200	19-48.5~	1/1/-/6,00				73	A manufacture of the second of	To oppose							247 / 10/0
1300	19-45 N	162-38:2									3	77 78 4			
1.400	19-41 N	164-37)										1		
1500	19-38 N	11.1-6150													
1600	19-3-12	6/2530				1							,		
1.700	19-30 -	16.12-100/00				>									
1800	19-250	167-13 w										9	, , ,	-	
1900	19.517	162-23							a,			7			
2000	19-17.31	11-2-32.20	, 1											1/0	247/ 1063
2100	19-181 N	162-41 w							1					*	
2200	14-10 N	162500							47-5						
2300	15-01. N	162-596													
2400	19-030	1/63-090										P.			

DATE WED	2. HNOV 19	64												
TIME: LAT	LONG	FRES WEA	VIS	SIP	DRY B	DEW FT	EMMD/0	III SKY	OPA SKY	WAYES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SFD.
off00 15 -	59 41 1,2 - 170		10		70		n-military (market market mark							
0200	55 W 113 - 37		11				G C C C C C C C C C C C C C C C C C C C		Ť.					
0300 18 -	5111/13-56 W		//\											
0400 /1-	48N 163 45.							The second						
0500 18 -	45 A 163 54:				196					£				
0600 18 -	CION 11:4-04 1									1				
0700 11 -	36N 164 - 14 W												10%	
0800 17 - 3	2 1641-35.	000			71									1545 / 10 KIS
0900 //	241144-35.												7 - L - C - C - C - C - C - C - C - C - C	
1000 /8 =	25 1 164-44													
1100 /3	Jan 164-550	- 511							1	</td <td></td> <td></td> <td></td> <td>204)</td>				204)
1200 18 - 18	1 N /65-050	N -									[[1249 / 101013
1300 /30	15~ 165-10-	-												
1.400 /8-	11N 165-33	-								,				
1,500	881165-32	J			Ŋ .									
1600 /8 -	05.1105-410													
1700	034 /65-570)						(.	-					
1800 / 7 ~	59 166-000	~ .								2				
1900 /7-	58 166-10 W				E CHEMINATAN AND					2				
2000 17-5	3.84 166-19.5				-				-		1		To the second se	12419 / 10163
2100 /7 -	51× 166 -38	٠,٠									1			
2200 /7 =	47-166-37										2			
2300 , 7 =	414m 166 - 46	اللاسا												
2400 11	4011/6 36-		/			1	1		1	May -	!			
REMA	KKS:													

DAUE THURS 5 NOU 1964

TIME:	TAT	LONG	PRES WEA	VIS	SIP	DRY D	DEW PT	HUMD/C	TE SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SELF COURSE/SFD.
0100	17 - 37	11167-050		10					2				1 6'		
0200	17-33	N /13 - 13 W		1	0					Ž.		5 13			
0300	17-30	11661-250		Λ						Y					
0400	17-271	V/67-31.			AL MARIAN										
0500	17-23	1167- 40W	3												
0600	17-30	N 167- 490	`			7.6-3	Concrete and the second								
0700	17-14	N 668 - 01 W	V. 177						~						
0800	17-12	168-09 0	1												248 / 18/13
0900	19-08 ~	168 = 19 W				7)									
1000	17-0-11	168-2500												1	
1.100	16-59.4	168-380									100				
1200	16-569	168-45 W									166				248 1 10kg
1300	16-52	N 168-34W									0				
1.400	16-471	1169-00/w												5	
1,500	16-43	N/169-12W									100				
1,600	16-39	N169-194							-)		/ 1	1			
1700	16-33	N/69-316													
T800	19-25	N 169 - 19 W				-			,)		
1900	14-18	1 /69 - 10 W											ļ		(60
2000	16091	169 - 16.6a	1												164 1 10 tess
ST00	15-59N	169-15-										1			
2200	13-50	169-120		11					ļ						
2300	13-40	13 169-100	13/-1.												
2400	REMARKS	d1/4- 574		10			!	!	1 21	1			1		

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955

12-5-63

DATE FRI. 6. NOV. 1962

TIME:	T.41!	LONG	FRES WEA	VIS	SIP	DRY 13	DEW FY	D\contre	TT SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SETP COURSE/SED,
0.000	15 10 1	1169 - 65			1						1 200 3	1 74	Re-	7	
0200	13	19 00		-						A					
0300	15 - 0/ 2	11.0 - 03									3	-			
0400	121-51 1	1/69 - 03					CALLES TO THE TOTAL OF THE TOTA				21	,			
0500	7-21	1/19-03									1. 5	*	19	9	
0600	12 - 40 1	169 - 24 1		1							10				
0700	12-35	1/29 - 05			-						10-13	1			
0800	14 - 30 N	169 - 0550	The same of the sa		Section 1						1199 5				. 1
0900	14-33 N	11.9-09 12		-			The second secon				6 - 6			i i	n .
1000	III N	1/1-9 - 12.					the same of the rank of the				7 /				
1100	14 - 08 01	169-11011		1							1				
1200	14-02IN	169-00 W													
1300	13 - 53 N	169-550	Carrie 3 of Carrie Share and a second								8 8	1 85			
1400	13 - 151	11/69-310	1								_ (, , , , , ,				
I500	13 - 40 0	16-9-30 W	9		-				4						
1600	13 - 3 < 1	169-440		3-2-2-2-2							2				
1700	13-29 1	169 - 45 W							200		3				
1800	13-24/1	169-55 W													
1900	13-20 1	170 00 00							-						
2000	13-17.52	170-060									4				
2100	13-11 0	170-13 W									1000				
2200	13 - 64 N	170-200									25				
2300	12-58 N	170-370							-						
2400	12-522	1170 - 34W	T)							040	1 35			
	REMARKS;														

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

DATE DAT. 7 NOU! 1964

TIME	TAT	LONG	PRES WEA	VIS	SIP	DRY I	DEW FT	HUMD/0	TI SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	1 17	4211170-42	1		•	j j			1	1					
0200	12 -	38'N 170 - 50 L								-					
0300	12-	32/170-580								y v					
0400	12-	JSN 171-06 -													
0500	12-	18 M 171-15 ~													
0000	12 -	12N 171-31W							1						
7800	1/2-	00 N 1/1-3/W	and success services												
7500	13 -	57N 171-360							1						
1000	112-	37 N 171-33 W													
1100	1/2-	35N 171-31W													
1200	12-	42N 171-28W							3						
1300	12	46N 171-26W								Politics.					
1400	12-	50 N 171-180							-						
1.500	112 -	254 171-19W								-					
1700	1/2-	372 111-18-		-											
1800	13-	NS N 111-130	1						The second second	-					
1900	3 -	18 N 171- 05													
2000	13 - 6	12 N 1 11 - 030													
2100	1:3	37 1 170 - 58W													
2200	13-	32N 170-54W													
2300	13-3	384 170-490						ne ne de la company	-	-					
2400	13- A	170 - 44w 1RKS:						A STATE OF THE STA		1				!	

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

		5	
DATE PLAT	3	NOU	1964
11:10			/

TIME	TAT	LONG	FRES WEA	VIS	SLP	DRY D	DEW FY	S/CMILLE	TEL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP (OURSE/SFD.
01:00	113 47	170-400				Law it a				j			g di			
0200	13-347	170-360											E-total			
0300	113-59 N	170-31~						W.		2						
0400	14-054	170-270														
0500	14-10 N	170-22-			L RESTELL SERVICE AND ADMINISTRA											
0600	14-16 1	1170-180														
0.100	14-21 N	1170-130					***************************************									
70000 70000	14-2.6N	170-10w														
7000	14-30.2	110-030				-						1				
1100	14-35 N	1/67-3/0	1										Y			
1200	14-472	11-5-47												<u></u>		
1300	14 - 52 1	116-114														
1.400	14-582	11.9 - 38					the state of the s									
1.500	13-03 N	169-33 1-														
1600	15-071	1/69-310														
1.700	15-111	169-37:										A A				
1800	15-17:	169 - 450			Company and a second											
1900	13- 32 7	169-51W														
2000	12-28.24	169-36W			The second secon											
2200	15-35 2	1170-03-										1				
2200	15-272	170 - 11 w					· · · · · · · · · · · · · · · · · · ·									
21100	115-22-	170- 18 2				-										
	REMARKS:			-			_ 	The second second second second						1		

DATE MOW	9 NOV-1	964											
	LONG W		VIS	DRY D	45 -	A Ac	TI. SKY				WIND S	WIND D	SHIP COURSE/SFD.
0100 15-09	1170-34								ð				
0200 15-03	170-42												
0300 14-38	170-50							The state of the s	¥				
0400 14-33	170-37		d							8			
0500 14-48	171-05												
0600 14 - 44	171-14												
0700 14 - 38	1171-23												
0000 /4 - 33	111.31									1			
19110 1 19 - 36	171-36									1			
1100	11-4/								kein - australia in				
1200 14-10	41												
1300 113	111-34.5									1			
1400 13 417	172 06												
1500 13 38	172-10				TTT NOMOLEGIST & TEMPARE								
1600 13 - 30	1779 - 36												
1.700 13 - 24													
1800 13 - 37	172 - 40												
1900 13 - 36	172-48												
2000 13 - 412	172-52.8												
2100 13-48	172 - 39										Ö		
2200 13 - 54	173-05												
2300 14 - 02 N	173:-00 0												
2400 14 - 08	172-54			1				Y			2		
REMARKS:													

DATE TURS. 10 NOU. 1964

TIME	TAT	N	LONG W	FRES WEA	VIS	SIP	DRY D	DEW PT			OPA SKY		SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	14.	14	1777-119				Į.		1	1		Ĭ.			1	
0200	14-	19	172-43						8				9	9		
0300	14-	26	172-39						Š		3	d				
0400	14-	33	172-34													
のうりり	1-14-	31	172-39						Y							
0000 0000	14-	4/8	172-33					Tiomson Carlo								
0800	7-	32	172 - 15		-											
0900	13-	36	172-10		-				\$	i i		1	10	1		
1000	15-	06	172-03	The second secon	LINCLING SPE					1	ñ					
IIQC	19	10.	1111-57								1 1					
1500	15-	16	171-57						-							
1300	15	50	171-46.		4						1					
1500	15-	35	171-40.		-											
1500	15	30	33.			-					1					
1700	13-	36/	111-024		-											
1800	15-	24	11-19			7										
1900	15	- 4/9	111-14			1										
2000	15	56	111-10													
2100	16	- 01	171-04													
2200	16-	0.5	170-59								1					
2500	16	11	170.32		-				-		-					
2400	DEM	VIARKS:	110-43	1	-	1	1	C		L Marie Control of the Control of th					4	

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

DAIE	WED	1 NOJ - 1	1964												9
TIME	LAT N	LONG (2)	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMO/o	II SKY	OPA SKY	WAYES	SEA TEMP		Charles Children Charles and Children	SHIP COURSE/SPD.
0100	116-36	1170-33							1		ð	1			
0200	16-32	171-03													
0400	16- 38	1171-37													
0500	16-34	171-38													
0700	11- 23	171- 59													
0800	16-52	172-01								Į.					
7,000	16-15	172-08				-									
1100	16 01.	172-14													
1200	1557	172-33						-							
1400	15-49	172-36													
1500	15-32	172-46								,			-		
1600	15-23	172 - 53								1					
1800	15-07	173-00													
1900	14-59	173- 21	4												
\$100 \$000	14-52	173-38													
2200		173-44													
2300	14-50	1173-35						1							
	REMARKS														

DATE HUES.	12 0	1.1964											
TIME LAT!	TONG (>)	PRES WEA		DEW PR		TEL SKY						SHIP COURSI	E/SFI).
0100 11-09	174-14				1					Ä			
0200 15-09	174-05				1	A contract of the contract of	à		B		1, 1		
0300 13-36	173-55	I	ì		3		1						
0400 15 - 35	1173-45							l .	8	Į.			
0500 15-215	173 - 35												
0600 15-54	173-55					-							
0,000 /6-03	173-15	0,											
0000 1/6 - 08	11/5-07			7									
1000 1/6 - 08	113-15												
1700 16-14	11(5-08												
1200 1 32	113-03								-				
1300 16 - 25	1/3-3/												
1400 1/1 - 37	178.12												
1500 // - 6/5	1700 30												
1600 11 - 44	179-361												
1700 16 - 45	179-27												
1800 14- 45	172-18												
1900 /6- 46	174-13												
2000 16- 46	172 09												
2100 16 - 46	172 - 02												
2200 16 - 46	171-55									-			
2300 16- 46	171 49												
2400 16- 46	171- 8/2				1		1			1			
REMARKS													

DATE 1-2, 13 200. 1964

TIME	LAT //	LONG 13	FRES WEA	VIS	SLP	DRY 12	DEW IT	HIMO/0	TE SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SFD.
O.TOO i	11 - 47	1 171 35			1				Î.		A				
0200	16-47	171 38		-											
0300	16-17	171 52													
0400	16-38	171 15										6			
0500	16-48,	171-08													
0600	16-48	171-01													
0700	16-48	170 - 35													
0800	10-46	1170-50					Designation of the second of t		The same as a second						
1900	1 - 49	170-43										4			
1100	16-49	170-35					Company of the second			J	-				
T.TOO 1	16 - 47	170- 28								Y					
1300	10 34.7	170-20							1			- Control of the Cont			
7400	10-76	1772 - 119								See					
1500	16 45	1/5 - 53													
1600	16 - 16	169 47													
1700	16 - 219	169- 40													
1800	16-51	11.9-31													
1900	16-53	149-33													
2000	16 57	169-15													
2100	17-00	169-08													
2200	17-02	169- 1:2													
2500	17- 85	168-05													
2400	REMARKS:	168-48		1244000 422	-				[!	

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

DATE SAL. 14 200 19/04

TIME	TAT!	LONG	PRES WEA	VIS	SIP	DRY E	DEW PT	HUMD/0	TE SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SFD.
OLOO	17-10	1168-40		4				Chipmen			À		# W W W W W W W W W W W W W W W W W W W	[
0200	17-14	168-52								A					
0300	17-18	168 - 23													
0400	17- 22	168-15													
0500	17-25	1168-07		ļ						\					
0000 0000	17-37	167-07					× 24.730								
0100 0800	1 - 27	167-35													
7900	1 3 5	1167-45					South and the state of the stat								
1.000	17 4/	167-25	The same same same	land and and											
1100	17 - 44	167-18								The state of the s		19			
1200	17 - 124	1167-11							And a			and the second s			
1300	17 - 50	1167-02													
1400	17 - 53	166-53													
1500	17 - 56	164-50								-					
T600	17-54	1/66-43					×		-	-					
1800	18 - 02	166 - 30	+												
1900	15 100	166 21	1												
2000	18 0/	166-07													
2100	X - 14	165 - 18	1												
2200	11-17	165-51													
2300	18-20	165-43													
2400	18-25	1/65-30			1					1	[
	REMARKS:	•													

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

DATE SUN 15 NOU 1964

TIME	TAT	LONG	FRES WEA	VIS	SIP	DRY D	DEW PT	HUMO/O	TT, SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SFD.
01.00	118-27	1165-26			1	Owner		· San Carlo	The state of the s		Ĭ.		70mm-48		
0200	18-30	165-18							1			9			
0300	18-34	165-07													
0400 0500	18-3/	1/62 -01													
0600	118-4/	164-5	4												
0700	18 = 47	11:4 - 72													
0800	18-52	164-25							3	i					
0000	18-3	164-17													
1000	18-08	116-1-07											ē d		
1.100	119-02	163-56													
1300	19-04	163-544	4							-					
1700	15 - 66	163-45				-			C. C						
1500	9 08	1/13-29													
1600	19-10	163-27													
1700	19-12	163-17													
1800	19-15	163-08													
1900	19-16	162-50											-		
2100	19-18	162-57													
2200	19-24	169-45	-									97			
2300	19-29	1/62 - 25													
2400	19-30	162-11				i				1					
	REMARKS:	(

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

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